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Communication and Purpose—Ingredients for Longevity

• *Halbert L. Dunn*

Communication and purpose are not ordinarily thought of as ingredients of longevity. However, if one pauses to consider what makes life worth living at the older ages and to evaluate the significance of communication as a tonic to the body, mind, and spirit of the individual—and also the role of purpose as a guideline for the 'will-to-do' at an ever higher level of potential—it becomes clear that high-level wellness at the older ages simply cannot be achieved without incorporating into daily living liberal portions of these two ingredients.

Types of Longevity

Longevity, in the abridged dictionary, is defined as 'length of life.' However, many persons use this term as defined in the unabridged dictionary, 'long duration of life.' As a demographer, it is my view that longevity, used in the latter sense, can and should be broken down into two types: (a) Longevity Type I signifies that portion of long life which has been brought about by various supportive public health and social measures, due to which the physical and social environments have been bettered so that a saving of life results, particularly at the younger ages. This means that more people live on into the older years. (b) Longevity Type II results largely from strengthening the inner world of man so that the quality and effectiveness of life is improved as man lives out his lengthened span.

We need to consider the differences between these two types of longevity because there is considerable evidence to show that the highly efficient, industrialized, and urbanized society in which we live, and which has been so effective in promoting Longevity Type I, might well be quite ineffective, if not positively impeditive to the promotion of Longevity Type II. Furthermore, it is quite likely that if we are going to make possible the achievement of Longevity Type II by a substantial proportion of the older population, which is now making up a steadily increasing proportion of the total population, we *must* do something about nurturing the elements essential to strengthen the fabric of man's nature and to enhance the vigor and resilience of his mind and body as a biological organization. For, Longevity Type II involves more than just added years. It is added years of greater effectiveness. We may define it as 'the further years which are added to the life of the individual when his inner world is strengthened by purpose, effective living, and self-fulfillment.'

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TABLE 1. Estimated number of survivors to the indicated ages for each 100,000 persons born in the United States in 1890 and 1950.

	1890 Generation		*1950 Generation*	
Age Limit	*Males*	*Females*	*Males*	*Females*
0	100,000	100,000	100,000	100,000
10	72,969	74,973	96,410	97,258
20	70,636	72,750	95,578	96,866
30	67,002	69,147	94,298	96,299
40	63,139	65,373	92,878	95,426
50	58,007	61,436	89,755	93,562
60	48,689	55,170	82,619	89,495
65	42,373	51,125	76,682	85,950
70	35,469	45,386	68,752	80,503
75	27,001	38,219	57,638	71,582

Advances of science and the profound change in the social structure during the last 60 to 70 years in these United States have produced momentous changes in the life cycle of the individual. Furthermore, these changes in the life cycle–particularly those which affect the emerging mind of man –are continuing at a terrific pace.

Table 1 sets forth a calculation of the survivors to the indicated ages for each of 100,000 persons born in the United States at the beginning and at the end of this 60-year period. These are essentially generation life table values, in which the survivors calculated for future years are based on the assumption that mortality rates will continue to decline as they have in the recent past. The changes portrayed by age and sex are almost unbelievable. For instance, from the 1890 cohort of 100,000 females, approximately 75,000 were alive at age 10. In the cohort of females born in 1950, this low a figure for number still alive will not be reached until approximately age 73. What is the impact of this single fact on our society in terms of medical care, broken families, frustration, and loneliness of women living alone because their spouses have passed on?

Let us pause and contemplate some of the events which have affected the 1890 generation which do not directly affect the generation of 1950. The great influenza epidemic of 1918 hit youth most heavily, particularly males. Moreover, World War I took a heavy toll in the lives of young men at this same period. What did these two events mean in terms of children never born? In leadership and brilliance lost to the nation during the crucial years of the current decade? And what of the great depression in 1929-1933? What did this mean, not in terms of its impact upon the economy but in terms of humanity –insecurity, timidity, and loss of creative potential? And what has been the effect of the great lifesaving inventions –insulin in 1922, sulfa drugs in 1936, penicillin in 1929, and poliomyelitis vaccine in 1953? What do these health bonanzas mean in terms of lives saved? Or of cripples to be cared for? Or of genetic weakness passed on to generations still to come? In raising questions such as these, I am not trying to challenge whether the effects of such health measures have been good or bad for society but rather to make dramatically clear that not only do we have more people living longer but also that these

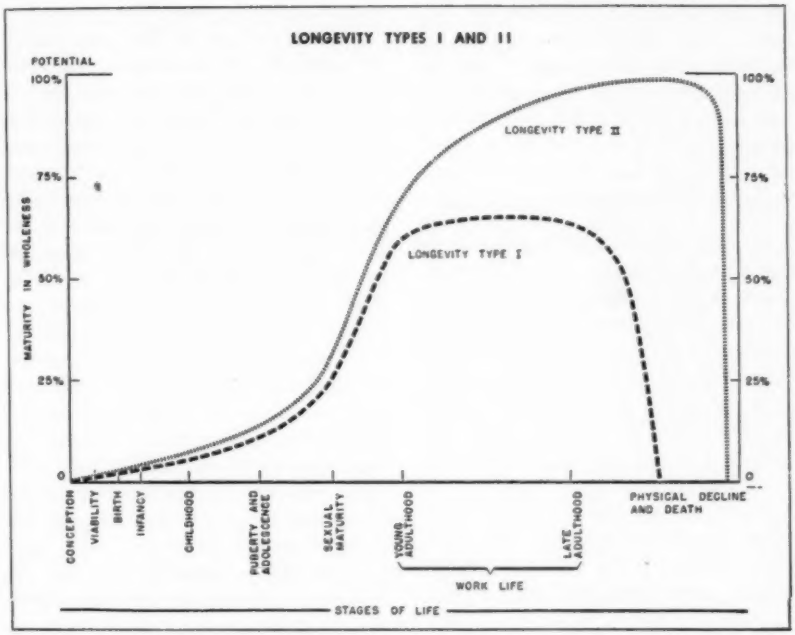

FIGURE 1. Schematic illustration of potential maturity in wholeness and survival in Longevity Type I and Type II at various stages of life.

older persons, preserved through the benefit of scientific advances and a protective cultural shield, contain within them the scars of the battle of life. Survival has cost the inner world of man considerable in terms of hardened arteries, lessened vitality, and mental illness.

Now the wellness of the body is linked closely to the wellness of the mind. An unhappy, frustrated, and unfulfilled individual deteriorates more rapidly, both physically and mentally. The promotion of mental wellness will offer the best means to slow down the aging process, make life worth living at the older ages, and, in general, achieve Longevity Type II.

Figure 1 schematically illustrates what is meant by Longevity Types I and II. In general, Mother Nature takes care of us pretty well throughout the growth period and up through the early adult years of having children. For most of us, she has done about all she can do by the age of 25 or 30. From then on, we are on our own. Little by little, the body loses its vitality and resilience. Overweight becomes a problem. Our backs bend and shoulders droop under gravitational strains. Muscles tire more easily, and joints become creaky. It becomes a real struggle to stay fit. Mother Nature is not concerned with us at this stage, because

we have passed on the biological heritage to our children. She is too busy with them to worry much about us. We oldsters may be large in numbers, but we are pretty well 'over-the-hill' biologically.

Worthwhile Living

What makes life worth living at the older ages? This is the question we must answer if we are to come to grips with the problems and the potentialities of Longevity Type II. In general, of course, it is obvious that the answer must be found in the culture which has shielded us from early death. (By culture is meant the sum total of accumulated knowledge, tradition, and wisdom which comes to us as a birthright, inherited from those who have lived before.) In the United States, we inherit a very precious and cherished brand of culture, containing within it the tradition of human freedom and of creative endeavor by the individual. The diginity of man is axiomatic to our deep beliefs.

However, we cannot be passive in our support of the culture which is our heritage, not if we wish to achieve Longevity Type II. The lifeline of Longevity Type II starts to leave that of Type I somewhere in early adolescence, perhaps even as far back as early childhood. There is no doubt at all that the chance of attaining Longevity Type II, if one does not start working for it before retirement age, is almost nil.

In considering what makes life worth living at the older ages, it is essential to realize that older people have the same needs as are common to people at all ages and that, in addition, they have special needs due to the fact that they are advancing in years. The decrease of vigor, hardening tissues and brittle bones, the blunting of sensory acuity in sight and hearing, the surrendering of status upon retirement, the lessening of physical attractiveness, the menopause, loss of friends and loved ones through death—these are among the many factors requiring self-adjustment and reintegration of self on a modified dynamic axis of interest. If one is to find happiness and self-fulfillment in these later years, a realignment of interests must be undertaken. Such reshifting and reintegration are difficult but can usually be managed by the individual through a reassessment of his values and of the varied activities of his daily life. Physically, his pace must be more leisurely; his living environs, less hectic. His vital interests must be transformed from a major competitive axis involving physical stresses and strains to a gentler and quieter pattern of lessened physical activity with a corresponding increase in the mental and spiritual aspects of living.

To feel needed and useful is a deep emotion experienced by all persons. As one grows older and retirement looms ahead, this need grows in intensity until, after retirement, it tends to become a hunger which must be satisfied or the fabric of the body, mind, and spirit as an organized whole breaks down.

In addition to this emotion, the older person feels a deep desire to pass on his knowledge, experience, and wisdom to others—to his children, his colleagues, and his fellow man. The fulfillment of this desire brings profound personal satisfaction and a feeling that his own life has been worthwhile and that he has added his bit to the common good.

This urge to give from one's inner self to others and to one's culture is the strength of humanity. We, in the United States, can be particularly proud of our culture. But, its possession means that we have not only an extraordinary opportunity but also a great responsibility to develop further this culture into something which represents the best of mankind's achievements and aspirations in terms of human values.

Now I do not mean to minimize the security needs of the older person. As a person becomes older, he becomes more aware of his security requirements because he can no longer feel sure of himself in the hurly-burly and fast-moving tempo of modern living. Traffic goes too fast. Noises are too disturbing; lights, too glaring; decisions called for, too taxing; physical exertions, too tiring.

However, it is the need for fellowship, personal dignity, and mental and spiritual growth that makes self-fulfillment a realistic goal for the older years. Actually, we ought to be able to look forward to retirement with zest as a time when we can really be ourselves and do the things which bring us the greatest satisfaction, a time when we can blend our life with the broad stream of the race of man. Ultimately, we should be able to say, 'Life has really been worth living! I've enjoyed it to the full!'

Significance of Communication

To understand the significance of communication in the aging process, we need to understand what are the phenomena of aging itself. It is my hypothesis that aging is a concomitant of all energy organizations, from the subatomic particles to the atoms and molecules, the chemical substances, and on up the chain of organization into the series of structures which we call life forms. The hypothesis is that energy is bound into matter and that, according to the second law of thermodynamics, this energy tries to escape as soon as it is bound into structure. We recognize this phenomenon of organization as aging. According to this theory, the radioactive isotopes are the aging phenomena of atoms and, consequently, provide a means of diagnosing the aging of the rocks and fossil plants, thereby writing for us a history of the past vitality of the sun. At first, it might seem odd to think of a sodium ion as aging. But, if you look at a piece of glass which has lain in the sunlight on the beach for many years, it has taken on a violet color. This color, I understand, results from colloidal sodium atoms caught in a silicate matrix. This would seem to be a perfectly good example of aging in matter.

Evolution is the history of the life process as it builds energy organizations into increasingly complex and specialized life forms. As matter was organized into form, protoplasm emerged and life was born. Single cells became increasingly complex, which led to the linking of multiple cells into more efficient, cooperative commonwealths of cells with mutual interests. Systems of specialized cells were formed, and, at length in the process of evolution, mankind emerged as the dominant species.

The individual is an enormous, organized mass of cells. This cellular entity is a topological structure which grows, suffers attrition, and, eventually, dissolves as an organized whole at

death. Body cells, in turn, are also very large organizations of molecules. They have a nature of their own and needs which must be served if they are to survive. Body cells cooperate in a cellular commonwealth, relinquishing their independence to better serve their needs. Although yielding autonomy as independent living structures, cells retain a dignity of their own which must be respected in order to attain a cellular commonwealth that is resilient and strong as a whole.

Energy bound into communication is peculiar to the life process. Perhaps it is this type of energy which controls the living organism as a whole and is dissipated in a flash at death. Communication energy is bound into the substance of all protoplasm. Every cell of the body can 'remember' in its own way. Pain can be buried in the tissues. Cells can remember hunger and become sensitive to chemicals. The life process at every point requires memory and communication.

Communication is a process which goes on throughout the entire life cycle of man. It develops in the early part of the life cycle and declines in the later years. For example, consider the development of muscles. Ruesch and Kees (2, pp. 16-17) point out that the motor system develops in a phenomenal way soon after birth:

> The lips, tongue, eyes, neck, shoulders, arms, hands, fingers, trunk, legs, feet, and their respective motor functions mature in succession. Although hand-mouth and hand-eye coordination achieve a certain level of complexity around the age of five years, it is only between the ages of eight and 10 that movements become smooth and poised, hand-eye coordination speedy, and the balance of body and rhythm is finally mastered.
>
> . . . . . .
>
> Speech is one of the last of the functions to develop and mature. At the age of 18 most anatomical structures of the body have reached a point of development beyond which they will not progress noticeably, but the larynx continues to develop during maturity. The hardening of the cartilaginous tissues, which is responsible for changes in the voice, continues well into adult years.

With the passing of the years, the sensory intake ports of the body begin to close down. At first, this is hardly noticeable; but, as aging advances, sight and hearing begin to fail and, progressively, the older person needs to find his life satisfactions through the knowledge, memories, experiences, and creative incentives which have been stored and organized within his body and mind.

The interrelatedness of the human organization, or its 'wholeness,' must grow just as the body grows. The maturity of adulthood and older years is related to 'wholeness' and must also grow. To achieve high-level wellness involves 'maturity in wholeness' of the individual.

The most important factor required for ensuring a vigorous, productive old age with a minimum of body attrition is the maintenance of self-integration. Since everything inside and outside of the body is contantly changing, self-integration is a dynamic axis of equilibrium, the maintenance of which can best be achieved through stimulating, from early childhood onward, creative expression as an outlet for the particular interests of the individual. The nurture of interest in creative expression by the individual produces his creative contribution to the human culture which has surrounded him throughout his life. A sense of self-satisfaction comes to the person who fulfills thus his obligation to the human

race before passing on. The birthright for the following generation has been enhanced because of the manner in which he has lived his life.

Creative expression is a dynamic for achieving Longevity Type II, because it is a major means of supplying purpose to life, particularly purpose which is tailor-made to meet the needs for satisfying the uniqueness of the individual. Uniqueness is one of the major components of the nature of man, and, unless this element is recognized in daily living, self-fulfillment is difficult, if not impossible.

Communication and purpose, therefore, become increasingly important with the passing years. Since each of us lives in both an outer and an inner world, access to information and open channels of communication are essential to resolve the daily problems of living; this is true for both the communication pathways within the body and the mind and for society. High-level wellness for man and society requires harmonizing, through a continuum of reintegration, our understanding of self and of others. Neuroses set in unless such harmony can be achieved and maintained as a dynamic equilibrium.

The reason that communication is so very important to Longevity Type II is that it plays the stellar role in the satisfactory performance of the mind as a problem-solving mechanism. After all, it is the use by man of his mind to solve problems that has permitted him to rule over other life forms. And, in particular, it has been the use of his mind in creative activity that has set man apart from the rest of the animal kingdom. Assuming a properly constructed neuromuscular system at birth and an anatomically perfect problem-solving mechanism, what is it that men do in daily living which produces the glaring inaccuracies of conclusions reached and the ultimate breakdowns in mental health which have multiplied under the increasing complexities of modern civilization? It is my personal view that a great part of the trouble results from distortions in the communication mechanisms. Even the giant digital computers at which we marvel, the so-called 'great brains,' cannot solve their problems without access to accurate and sufficient data necessary for the solutions.

In many ways, social man is prone to violate the basic principle of maintaining open channels of communication and giving free access to data needed for problem solving. False advertising, distorted language, subliminal suggestion, twisted propaganda, and dogmas of all sorts fill our daily life. These distortions come to us from friend and foe alike. And, buried deeply in the inner man as fixed beliefs—as unchallengeable 'truths,' no matter how wrong such beliefs may be—they are passed on from parent to child and thus are woven into the fabric of human cultural patterns.

We teach our children what to think, but do little toward teaching them how to think. Why can we not train them, from babyhood on, that, when new situations arise which contradict what has been taught, it is normal and right to re-examine what one has learned? After all, no matter how conscientiously we try to teach true facts, some data or ideas or beliefs that we ourselves have learned are almost sure to be wrong.

The natural evolution of man is still

underway and, in fact, seems to be proceeding at an accelerated rate. But, it is largely an evolution of the mind of man which is moving from a conceptual type of consciousness into a higher level of creative consciousness. Little by little, the logical methods, built upon classification and symbolic systems of discrete observations and experimentations, are giving way to the relativity of the interrelatedness of events and knowledge. This, in turn, opens wide the door to creative and intuitive thought processes which implicitly recognize the beauty of harmonious 'wholeness.' Imaginative thinking requires freedom to reach outward toward ultimate values, and, increasingly, freedom in action will find new realms to discover and new horizons beckoning as absolutism in all its forms gives way to relativity and as time, the direction ruling all the physical universe, is modified by purpose.

Freeing the creative imagination is only one of the great lines of influence in the energy fields which surround us and give purpose to life. Another great force is that of love as it spreads outward toward the brotherhood of man and the oneness of life. Moreover, never will we free ourselves completely from the guiding lines of force of the natural energy fields, because our bodies are manifestations of organized energy and man, as a child of energy, must follow the laws of energy. Social forces also have their guiding lines of influence which we flout at our risk and which, under certain conditions, can become as oppressive as those envisaged by Orwell (*1*). Perhaps there are cosmic energy fields which also play their part, although these are but dimly perceived as yet.

Both communication and purpose are intimately bound into the well-being of the individual—his body, mind, and spirit. It is a reliable clinical observation that when people are 'sick' they respond best to those persons or medicines or things in which they have faith, be it a person, a drug, a minister, a physician, or a quack. Whatever inspires faith brings beneficial effects, at least temporarily. One needs purpose to help establish faith; and one must have faith in order to achieve self-integration which is vital to physical, mental, and spiritual well-being. As I see it, self-faith is the best form of faith because it means that it requires us to have up-to-the-minute faith and re-integration of self in order to preserve a dynamic equilibrium of self. But *any form of faith* is better than *no faith at all*, because faith is required if one is to experience purpose in life.

The Way Ahead

Fundamentally, the way ahead for the older person, so that he may enjoy well-being and Longevity Type II, is the same as it is for the younger person if he is to live fully. Well-being involves living life to the full—not in the future, or in the past, or in the present, but in the *past*, *present*, and *future* simultaneously. Everything that we have been and all that we will be are part and parcel of what we are now—this very moment. Well-being, then, is not a static state but a direction in which we are going. Whether it be a person, a family, a community, a nation, or a world, it involves a forward direction in progress, an open-ended expanding future, and an integration of all the parts into a whole—a maturity

in wholeness. Communication and purpose are ingredients of maturity in wholeness. A long life which has maturity in wholeness, whether it be for man the individual or for social man, is Longevity Type II. It is my conviction that Longevity Type II is a fruit, ripe for the picking. We only need to reach up and pluck it.

Summary

Longevity Type I is long life brought about by improved physical and social environments, and Longevity Type II results from strengthening the inner world of man by purpose, effective living, and self-fulfillment. Communication and purpose become increasingly important with the passing years. They are the ingredients of maturity in wholeness.

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1. Orwell, G., *Nineteen Eighty-Four*. New York: Harcourt Brace, 1949.
2. Ruesch, J., and Kees, W., *Nonverbal Communication: Notes on the Visual Perception of Human Relations*. Berkeley: Univ. California Press, 1956.

Historical Notes on Early Study of the Deaf

• *Thomas E. Jordan*

It is generally conceded that effective treatment of hearing problems is a fairly recent development and that early attempts were lacking in rigor and were largely ineffective. To some extent this last observation is true, but it bears examination in the light of evidence rather than speculation. This paper is an attempt to present some documentary evidence on early attempts to help the hearing handicapped. The evidence is taken verbatim from several sources, and the reader may judge for himself how his efforts differ from those of his counterparts in previous ages in wit and wisdom, in energy and effort, in skill and effectiveness. The material comes largely from the late 1600's, with an addition from the 1700's. The state of knowledge at those times was far more consistent than it would be if the selections were taken from 1861 and today.

Causes of Hearing Loss

William Holder, D.D., was one of those indefatigable divines whose energies were directed into many enterprises. The problems of the deaf were particularly challenging to him, and his contemporaries considered him preeminent in this field. In one of his many notes to the Royal Society (*2*), he reported a case of hearing loss in a child which he attributed to a fright suffered by the mother during pregnancy, which 'distorted' the face of the child.

> I supposed the defect to lie in the want of due tension of the tympanum of his ear; whose use I took to be only to preserve the auditory nerve and brain, and inward parts of the ear from outward injury by cold. . . .

In another place (*3*, p. 118) Dr. Holder places the source of hearing difficulties squarely in the middle ear:

> The only movable Organs belonging to the Sence of Hearing being two of those three little *Bones* before mentioned, *viz.*, the *Incus* and *Malleus;* and so much depending upon the adequate motion of those two *Ossicles* to give due Tension to the *Tympanum,* and their Motions being small, are easily subverted, and from thence most frequently comes *loss of Hearing.*

A contemporary of Dr. Holder was another Doctor of Divinity, Dr. Burnett. This gentleman undertook an extensive tour of several countries and recorded his observations in a book which enjoyed an excellent reputation for many years. A contemporary traveler would comment on political occurrences and would find his audience attuned to those realities. Dr. Burnett slights civil government for the more delicious tidbits of natural phenomena. His writings abound in monstrous births and accounts of strange happenings. On the origins of deafness his comments refer to the daughter of a Swiss Minister.

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The passage in question is not phrased in a way completely clear to us; however the good Doctor reports (*1*, p. 248):

> It seems while the milk of her Nurse, was more abundant, and the Child sucked more moderately the first year, those humours in the blood and milk had not that effect on her, that appeared after she came to suck more violently: and that her Nurse's milk being in less quantity, was thicker, and more charged with that vapour that occasioned the deafness.

Treatment of Deafness

William Holder's account (*3*) of methods of rehabilitation is perhaps the fullest. Holder felt that training should only supplement whatever medical help might be possible. Considering the case of a young boy whose deafness he attributed to 'that convulsive starting Motion in the Womb' which had reduced the tension of the tympanum, he 'advised that excellent Lady his Mother, to consult with Learned Physitians, if by some adstringement Fumes, or otherwise he might find help.' He also thought of a nonmedical approach, the 'impulse of any *vehement* sound; as of a Drum beaten near him' which would tense the tympanum 'by driving and swelling it inwards, as a fresh gale of wind fills the sail of a ship; and the Experiment succeeded according to my expectation' (*3*, p. 165).

Basis for Training

It is clear that the absence of speech in the deaf was known in the late 1600's to reflect the hearing problem rather than malfunction of the speech organs. In a letter to Robert Boyle, Dr. John Wallis (*5*) describes one of his cases:

> I was very certain that his want of speech was but a consequence of his want of hearing, and did not proceed originally from an indisposition in the organs of speech to form those sounds.

In a complementary fashion Dr. Holder (*3*, p. 114) asserts:

> Now as to the most general case of those who are Deaf and Dumb; I say, they are *Dumb* by *consequence* from their Deafness, onely because they are not taught to speak. But he that never hears a word spoken, nor can be told what it signifies, it is no wonder if such an one remain speechless . . . not by any immediate *Organical Indisposition*, but for want of *Discipline*.[1]

Dr. Wallis (*5*) points out the same thing:

> The ear as much guides the tongue in speaking, as the eye does the hand in writing, or playing on the lute; and therefore those who by accident wholly lose their hearing, lose also their speech, and consequently become dumb as well as deaf.

Teaching Problems

It is commonly agreed that child psychology suggests that pupils be treated in a kindly fashion. These suggestions for handling the young deaf have a ring of familiarity. Speaking of the way to begin, Holder (*3*, p. 118) suggests:

> He must be allured by much sweetness, and encouraged, as oft as you have the least occassion, by applause and admiration; and must exercise often and a little at a time, so as not to vex and weary him.

So much for an educational psychology. The actual procedures indicate agreement on oral language training and speech reading. The young Swiss lady seen by Burnett in 1686 'hath by observing the motions of the mouths and lips of others, acquired so many words that out of these she hath formed a sort of jargon' (*1*, p. 248).

[1] i.e., instruction.

Dr. Wallis' account (*5*) makes explicit his grasp of the problems.

> For there being no other way to direct his speech, than by teaching him how the tongue, the lips, the palate, and other organs of speech, are to be applied and moved in the forming of such sounds as are required, to the end that he may by art pronounce those sounds, which others do by custom, it may be thought hard enough to express in writing, even to one who understands it very well, those nice curiosities of and delicacies of motion, which must be observed, though we need it not, by him, without help of his ear to guide his tongue, shall form that variety of sounds we use in speaking; many of which curiosities are so nice and delicate, and the difference in forming those sounds so very subtle, that most of ourselves, who pronounce them every day, are not able without a very serious consideration to give an account by what art or motion ourselves form them, much less teach another how it is to be done.

Despite the obvious problems progress was reported. A deaf student, Daniel Whaley, was educated by Dr. Wallis to the extent that he was presented to the Royal Society in 1662 'and did in their presence, to their great satisfaction, pronounce distinctly such words as by the company were proposed to him.' In the space of one year he attained such skill that he could express himself intelligibly. His achievement also caused him to be presented to King Charles and Prince Rupert at Whitehall. Such progress would be considered remarkable today.

Dr. Burnett's account (*1*, p. 248) of the Swiss girl is a remarkable case of self-education. The use of kinesthetic cues today is largely an adjunct to reinforce proper production of sound. Dr. Burnett reports the attempt to use kinesthetic cues as the direct medium of communication.

> She hath a Sister with whom she has practiced her language more than with any other; and in the night, by laying her hand on her sister's mouth, she can perceive by that, what she saies, and so can discourse with her in the night.

Braidwood Program

Some 90 years after the writings of Holder, Wallis, and Burnett, that tireless observer of the human scene, Dr. Samuel Johnson, a doctor of letters, it may be noted, gave an interesting account of his visit to the Braidwoods in Edinburgh. 'Dictionary' Johnson had finally consented to visit Scotland, and after what was an endless journey to him, though not to Boswell, came at last to Edinburgh and civilization. The year was 1773. Johnson (*4*, p. 148) wrote:

> There is one subject of philosophical curiosity to be found in *Edinburgh*, which no other city has to shew: a college of the deaf and dumb, who are taught to speak, to read, to write, and to practice Arithmetick, by a gentleman whose name is *Braidwood*. The number which attends him is about 12, which he brings together in a little school, and instructs according to their several degrees of proficiency.
>
> The improvement of Mr. Braidwood's pupils is wonderful. This school I visited, and found some of the scholars waiting for their master, whom they are said to receive at his entrance with smiling countenances and sparkling eyes, delighted with the hope of new ideas. They not only speak, write, and understand what is written, but if he that speaks looks towards them, and so modifies his organs by distinct and full utterance, they know so well what is spoken that it is an expression scarcely figurative to say, they hear with the eye.

If we keep in mind Dr. Johnson's well-known aversion to things Scottish, we may conclude that this is praise indeed. His own sensitivity to the problems of the deaf was probably due to the hearing loss which he developed in later years.

In these early accounts of attempts to educate young people with auditory handicaps, resource and ingenuity are demonstrated as well as some remarkable oversimplifications. Perhaps the application shown by these early workers constitutes a bond with our efforts today. Certainly the dedication shown in these early writings is a standard of excellence to which we too may aspire.

Summary

Some early explanations of the causes of deafness and efforts to help persons with hearing loss are presented in quotations from writings of the seventeenth and eighteenth centuries.

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Limited-Frequency Screening and Ear Pathology

• *W. Ruth Maxwell*

• *G. Don Davidson*

Within the past few years a new concept of hearing screening has developed in which the single frequency of 4000 cps or a combination of 4000 and 1000 or 4000 and 2000 cps is used in place of the standard six-frequency sweep-check method. To date a difference of opinion exists as to the effectiveness of the new technique, and this has resulted in considerable research on the question. The majority of studies have found the limited-frequency tests inadequate for finding all children with audiogram losses. However, the question arises as to whether those audiogram losses missed by a limited-frequency test are indicative of true hearing impairment or ear pathology. Perhaps a limited-frequency test would be effective in detecting those hearing losses concomitant with ear pathologies.

A small amount of research has already sought to answer this question. Lightfoot, Buckingham, and Kelly (*2*) reported the 4000-cps test inadequate for detecting pathological conditions. However, Lawrence and Rubin (*1*) found the 4000- and 1000-cps combination adequate for locating hearing losses with medical significance. Also, Sataloff and Menduke (*3*) reported the 4000-cps test would have missed only five of 100 children with hypertrophied adenoids.

It was the purpose of the present study to investigate further the effectiveness of hearing screening tests using 4000 cps, 4000 and 1000 cps, and 4000 and 2000 cps in finding ears with pathological conditions concomitant with loss in acuity.

Procedure

Source of Sample. Two samples of audiograms were used in the study. One sample was obtained from the Putnam County Health Department files of audiometric records covering a period from September 1957 through November 1959 and consisting of 62 audiograms or 108 ears. The second sample was obtained from the Overton County Health Department files of audiometric records covering a period from August 1959 to April 1960 and consisting of 28 audiograms or 53 ears.

Audiograms. Audiograms of 90 children, 42 males and 48 females, were used in the study. Of the 90 subjects, 71 had a unilateral loss and 19 had bilateral losses. The audiograms showed that 161 ears were found to have a loss at 15 db in one or more of frequencies 250, 500, 1000, 2000, 4000, and 8000 cps. Four testers, who had received training in audiometry and had performed pure-tone threshold tests for a number of

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TABLE 1. Distribution of ears according to location of pathology.

Location of Pathology	*N*	*%*
External canal	13	8.1
Eardrum	79	49.1
Middle ear	35	21.7
Tonsils and adenoids	34	21.1
Total	161	100.0

years, gave the tests in quiet rooms. The hearing tests were performed with Maico F-1 audiometers and calibration was made at regular intervals.

Otological Report. Each ear involved in this study had been examined by one otologist. In making the diagnostic summary of the ear, the otologist used such varied terms as diseased tonsils, diseased adenoids, enlarged tonsils, enlarged adenoids, cerumum in canal, foreign objects in canal, perforated eardrum, dull eardrum, retracted eardrum, scarred eardrum, otitis media, mastoiditis, and draining ears.

Method of Analysis. To facilitate the evaluation of a single- or double-frequency hearing screening test for detecting pathologies concomitant with hearing loss, the diagnostic terms of the otologist were divided into the following four categories according to the location of the pathology: (a) *external canal,* which included any obstruction by cerumum or any foreign object; (b) *eardrum,* which included perforated, retracted, scarred, or dull eardrum; (c) *middle ear,* which included otitis media, draining ears, and mastoiditis; and (d) *tonsils-adenoids,* which included enlarged tonsils, enlarged adenoids, diseased tonsils, diseased adenoids, or a combination of these. The number and per cent of ears falling into each of the pathology categories are shown in Table 1.

In categorizing the original otologic data on an ear having otologic findings in more than one of the four categories, those findings fitting the middle-ear category were given first consideration; those fitting the eardrum, second consideration; those fitting the external canal, third consideration; and those fitting the tonsils-adenoids category, last consideration.

The audiogram of each of the 161 ears was analyzed in the following manner according to the four categories of pathology: (a) number and per cent passing and failing a 4000-cps test, (b) number and per cent passing and failing a 4000- and 1000-cps test, and (c) number and per cent passing and failing 4000- and 2000-cps test.

RESULTS

Test of 4000 cps. If a 4000-cps screening test had been used on the 161 pathological ears, 130 or 79.6 per cent would have been detected and 31 or 20.4 per cent would have been missed. A summary of the data is found in Table 2.

TABLE 2. Number and per cent failing or passing a 4000-cps screening test according to location of pathology.

Location of Pathology	*Failed*		*Passed*	
	N	*%*	*N*	*%*
External canal	10	76.9	3	23.1
Eardrum	65	82.3	14	17.7
Middle ear	31	88.6	4	11.4
Tonsils and adenoids	24	70.6	10	29.4
Total	130		31	
Mean		79.6		20.4

The 4000-cps test was most effective in detecting pathologies in the middle-ear and eardrum categories and least effective in detecting those in the ton-

TABLE 3. Number and per cent failing or passing a 4000- and 1000-cps screening test according to location of pathology.

Location of Pathology	*Failed*		*Passed*	
	N	%	*N*	%
External canal	13	100.0	0	0.0
Eardrum	75	94.9	4	5.1
Middle ear	33	94.3	2	5.7
Tonsils and adenoids	31	88.2	3	8.8
Total	152		9	
Mean		94.4		5.6

sils-adenoids and external-canal categories.

Test of 4000 and 1000 cps. If a combination 4000- and 1000-cps screening test had been used on the 161 pathological ears, 152 or 94.4 per cent would have been detected and nine or 5.6 per cent would have been missed. The summary of this data is found in Table 3.

The 4000- and 1000-cps test was most effective in detecting pathologies in the external canal category, detecting all such cases in the sample. It was next most effective in the middle-ear and eardrum categories and least effective in the tonsils-adenoids category.

Test of 4000 and 2000 cps. If a combination 4000- and 2000-cps screening test had been used on the 161 pathological ears, 144 or 90.6 per cent would been detected and 17 or 9.4 per cent would have been missed. The summary of this data is found in Table 4.

TABLE 4. Number and per cent failing or passing a 4000- and 2000-cps screening test according to location of pathology.

Location of Pathology	*Failed*		*Passed*	
	N	%	*N*	%
External canal	13	100.0	0	0.0
Eardrum	72	91.2	7	8.8
Middle ear	31	88.6	4	11.4
Tonsils and adenoids	28	82.4	6	17.6
Total	144		17	
Mean		90.6		9.4

The 4000- and 2000-cps test was also most effective in detecting pathologies in the external ear canal category, detecting all such cases. It was next most effective in the other categories in the following order: eardrum, middle ear, and tonsils-adenoids.

The 4000- and 1000-cps test was found to be the most effective of the limited-frequency screening techniques used in the study, both in the total detection of pathological ears and according to the location of the pathology. The pathologies most easily detected by the limited-frequency screening test were those in the external canal category. The pathologies least easily detected were those in the tonsils-adenoids category.

SUMMARY

The purpose of this study was to determine the adequacy of limited-frequency screening tests in detecting ear pathologies concomitant with loss in acuity. The limited-frequency tests investigated were 4000 cps, 4000 and 1000 cps, and 4000 and 2000 cps. Data were obtained from the analysis of the audiograms and otologic findings of 161 ears representing 90 school children from Putnam County and Overton County, Tennessee.

The results indicate that none of the limited-frequency tests studied would detect all ear pathologies accompanied by a hearing loss. The most effective combination was 4000 and 1000 cps. By this method, only 5.6 per cent of the pathological ears were missed. Pathologies of the external canal were the most easily detected; those involv-

ing tonsils and adenoids were the least easily detected.

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Hearing and Speech in Follow-up of Left Hemispherectomy

• *Robert Goldstein*

In 1956, Goldstein, Goodman, and King (7) described the hearing and speech of four patients with right infantile hemiplegia on whom left hemispherectomies had been performed. Pre- and postoperative tests on these patients showed essentially normal hearing levels for pure tones and for speech, and normal discrimination for well-articulated speech (*9*). Discrimination for speech which is not so well articulated (*2, 3*) was normal for the left ear, but poorer than normal for the right ear, the ear contralateral to the pathologic or absent cerebral hemisphere.

One of these patients, Case 3 in Table 1 of the original report (7), was tested again on April 22, 1960. His birth date is September 5, 1918, which means that he was about 36 years old at the time of hemispherectomy, 37 at the time of the postoperative test, and nearly 42 years old at the time of the most recent test.

Tables 1 and 2 of this report give the recent test results on this patient and compare them with the results of his previous tests. The date of the preoperative audiogram was not recorded. Since it was performed shortly before the hemispherectomy, it has arbitrarily been dated August 26, 1954, one day prior to surgery. The postoperative hearing tests were performed on December 14, 1955. Between these two tests in November 1954, a craniectomy was performed for drainage of the cavity. By May 1956, the cranial cavity had healed sufficiently to permit cranioplasty.

Table 1 shows that for practical purposes hearing levels were normal in both ears for pure tones and speech except for the high hearing level for high frequencies in the left ear. There is no obvious relation between this hearing impairment in the left ear and the cerebral pathology.

Table 2 shows that discrimination for the more difficult speech (Rush Hughes) was not within normal limits in the most recent tests. The left ear had the better discrimination as it did in the first postoperative test when the score was within normal limits. Despite these scores, the patient was not conscious of any hearing difficulty in ordinary daily conversation, or of any difference in the clarity of speech between the right and the left ear. When asked specifically if he noticed any difference in the clarity of speech during the speech tests, the patient said that he thought that the speech was not quite so clear in the right ear as in the left ear.

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TABLE 1. Hearing levels in decibels of each ear of a patient before and after left hemispherectomy.

	Pure Tones (Air Conduction)								*Speech*
	250	*500*	*1000*	*2000*	*3000*	*4000*	*6000*	*8000*	*(W-2)*
Right ear									
Preoperative*	10	10	5	5	10	10	0	10	
Postoperative†	−10	−10	−10	0	10	15	0	10	8
Follow-up**	15	0	−5	−5	10	15	15	10	3
Left ear									
Preoperative*	15	15	10	5	10	60	25	10	
Postoperative†	5	5	−5	−5	0	45	40	20	5
Follow-up**	−5	0	0	−5	20	55	35	30	3

*Assumed date, August 26, 1954, day prior to surgery.
†December 14, 1955.
**April 22, 1960.

The slight deterioration in speech discrimination in the left ear since the first postoperative tests, if truly greater than test-retest variability, may be due in part to the slightly greater hearing level at 3000 cps than in the earlier test (*8*). The difference in scores could also be due to differences in word lists, in test equipment, or in the patient's motivation which was much poorer during the recent test than during the first postoperative test.

Alternate and simultaneous loudness balance tests were performed at 500 cps, a frequency for which hearing levels were normal and equal in both ears. The loudness growth was shown to be equal in each ear by both techniques.

A recording of the patient's speech had been made at the time of the first postoperative test and was available for comparison with his current speech. His understanding of conversational speech and his own expressive speech had not obviously deteriorated at all. His articulation was normal. He was not aphasic, and his vocabulary and language were commensurate with his limited education and culture.

TABLE 2. Speech discrimination (at levels shown in decibels above normal speech threshold) of a patient after left hemispherectomy. No preoperative discrimination tests were performed.

	W-22		*Rush Hughes*		
	%	*db*	*%*	*db*	*List*
Right ear					
Postoperative*	82	68	50	68	11B
			58	68	12B
Follow-up†	82	40	40	40	9B
	94	64	62	64	7B
Left ear					
Postoperative*	100	68	82	68	12B
Follow-up†	88	40	76	40	10B
	98	64	68	64	8B

*December 14, 1955, 15 months after surgery.
†April 22, 1960, 5 years, 8 months after surgery.

Discussion

Hemispherectomy is performed primarily for uncontrollable epilepsy or destructive behavior and, naturally, most of the case reports are concerned with descriptions of these conditions before and after surgery. With only a few exceptions, no hearing tests have been performed or reported, and only brief descriptions have been given of speech and language functions when they were not normal. Long-term follow-up studies on successful hemispherectomies are not common, and the few reports give only casual description of hearing and speech. Consequently, it is difficult to compare the present case with others who have survived for as long a time.

In 1955 Gardner and colleagues (*6*) reported a case 17 years after right hemispherectomy for a subcortical astrocytoma. This is the same case that Bell and Karnosh (*1*) had reported 10 years after the surgery. Neither speech nor hearing was impaired by the surgery, and both were apparently intact 17 years postoperatively. There are several other reports (*4, 5, 10*) in which it is stated or implied that speech three or more years after hemispherectomy was at least as good as or better than it was preoperatively.

In the present case, the maintenance of all functions except perhaps discrimination, in spite of the cerebral pathology and subsequent hemispherectomy, implies one or both of at least two things: (a) the communicative functions ordinarily measured are handled subcortically or have equal bilateral cortical representation, or (b) the readjustment of the central nervous system to handle these communicative functions must have occurred very early in the patient's life. If the latter is true, then it is unlikely that there will be any change in the measured hearing and speech except for some deterioration with age or because of illnesses and injuries completely independent of the cerebral pathology.

Summary

Speech and hearing in a 42-year-old man were essentially normal five and one-half years after left hemispherectomy and essentially unchanged from what they were preoperatively and 15 months following surgery. The only relevant auditory abnormality noted was poorer than average discrimination in the right ear for relatively difficult speech in spite of normal auditory sensitivity.

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Rapid Electrodermal Audiometric Procedure for Testing Adults

• *Howard B. Ruhm*

Since the initial audiological use of the electrodermal response (EDR) in 1948 (*1*), its application has commonly been thought to require traditional, Pavlovian conditioning. In an attempt to obtain such conditioning and to minimize extinction of the EDR, relatively lengthy conditioning schedules have been constructed (*2*, *4*), the use of which has proven to be generally effective in deriving threshold responses. Unfortunately, this approach requires that an examinee be subjected to an extensive, rather unpleasant series of stimuli which often causes fatigue and resistance to further testing. The technique is time consuming and it may impose undue stress on the examinee.

Recently, some investigators (*3*, *5*) have questioned the necessity of presenting a long series of conditioning stimuli to human subjects for the purpose of obtaining electrodermal responses to pure tones. That this kind of lengthy schedule is not always required in the electrodermal testing of children was shown by Grings, Lowell, and Rushford (*3*), who found that the majority of their pediatric test population required only between five and 14 unconditioned stimulus reinforcements (shock) in order to achieve a conditioning criterion of two consecutive electrodermal responses to tone. The minimum length of a conditioning series which is requisite for clinically effective electrodermal audiometry with adults has not yet been defined. Furthermore, clinical evidence has cast doubt as to whether classical conditioning is ever actually achieved in the limited time which is usually allotted to the testing of adults (*5*). It is the thesis of this paper that a lengthy conditioning series is unnecessary for electrodermal audiometric threshold determination in most adults and that very few pairings of tone and shock are mandatory for the perpetuation of the EDR to pure-tone stimuli.

The purpose of the present paper is to describe and encourage the use of a specific, short method for obtaining electrodermal audiometric thresholds in adults. The procedure is based on the premise that the salient requirement for achieving conditioned electrodermal responses in an adult is his cognizance of the relationship between the conditioned and unconditioned stimuli, that is, the linkage between the tone and the shock. Inasmuch as this awareness presumably occurs on a conscious level and involves the subject's understanding of the relationship between the tone and the shock, the process might be referred to as conceptual conditioning, as op-

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posed to classical, or Pavlovian, conditioning.

The following discussion (a) describes the rapid electrodermal audiometric procedure, (b) compares the validity of sensitivity thresholds obtained by means of this technique with that of thresholds achieved through an extensive conditioning schedule, and (c) reports the experimentally derived extinction rates of EDRs obtained after rapid and traditional conditioning.

Rapid EDR Audiometric Procedure

Standard electrodermal audiometric equipment is used for rapid conditioning. Specifically, a pure-tone audiometer, a source of electric shock, and a means of measuring momentary changes in either the electrical resistance or potential of the skin are employed.

The conditioning procedure is simple. A three-second duration tone is presented at an intensity approximately 30 db greater than either the estimated or avowed acuity threshold at the test frequency. Electric shock is presented immediately following the tone. The hearing loss dial is then set at a level approximately 15 db above the estimated or avowed threshold and the shock amplitude is adjusted to a higher level than was initially used. With these stimulus settings a second tone-shock sequence is given approximately one-half minute after the first sequence. The second presentation terminates the conditioning schedule.

The first tone of the test series is presented at −10-db hearing level. If an EDR occurs in response to the tone, it is reinforced with shock. The amplitude of this and all following shock presentations is the same as that used in the second unconditioned stimulus.

If no EDR occurs, however, an ascent is made to zero hearing level where the tone is presented again. In this manner, the ascending series is continued in 10-db steps until a conditioned EDR is obtained and is reinforced. A reinforcement with shock always follows the first conditioned EDR. After the initial EDR has occurred and been reinforced, a descent is immediately made in five-db steps, using 100 per cent reinforcement, until no response is elicited. Threshold is determined as the lowest level where two conditioned electrodermal responses are obtained.

The time required for the entire procedure of conditioning and establishing threshold at a single frequency is approximately five minutes. Should thresholds at additional frequencies or for the opposite ear be desired, they can be obtained most efficiently by starting a threshold search at −10-db hearing level and repeating the test sequence outlined above without an intervening conditioning schedule.

Validity Comparisons

Experimental data were collected so that a comparison could be made between the accuracy of threshold determination by means of the rapid method described above and the more traditional, lengthy conditioning schedule. For this purpose each of these methods was applied to two types of subjects with hearing loss: (a) those who were naive to electrodermal audiometry and (b) those who had previously experienced at least one electrodermal audiometric test. The resultant thresholds were compared with voluntary responses obtained by standard audiometry on the same subjects.

Equipment. The study was carried out in an acoustically treated two-room suite (Industrial Acoustics Corporation, Model 2426) consisting of a control room and test chamber. This facility is located at the New York Regional Office of the Veterans Administration. The control room housed a pure-tone audiometer (Beltone Model 15-A) whose signal was triggered by a psychogalvanometer (Grason-Stadler, Model E664). Equipment in the test chamber included the psychogalvanometer resistance and shock electrodes as well as a pair of earphones (Telephonic, Model TDH-39) connected to the output of the audiometer.

Subjects. A total of 40 subjects was drawn from a population of armed forces veterans who had voluntary pure-tone thresholds by air conduction between 20 and 60 db at 1000 cps and who demonstrated a consistent otological-audiological picture of impairment. The subjects ranged in age from 22 to 48 years, with a mean age of 33 years.

It was anticipated that a subject's past experience with electrodermal audiometry might either facilitate or inhibit conditioning. In order to determine whether such effects are of practical importance when either traditional or rapid electrodermal conditioning is used, subjects were chosen on the basis of two criteria of sophistication. In addition to satisfying the requirements for inclusion, half the subjects fulfilled the additional demand of never before having experienced electrodermal audiometry. These subjects constituted the naive group. The remaining 20 subjects had received electrodermal testing at least once prior to having participated in the present study. These subjects will be referred to as the sophisticated group. Ten subjects in each group were given rapid conditioning, while the other 10 received traditional conditioning.

TABLE 1. Random schedule of shock presentation following tonal stimuli for traditional conditioning. S = Shock; NS = No Shock.

Order	*Presentation*	*Order*	*Presentation*
1.	NS	21.	S
2.	S	22.	S
3.	S	23.	S
4.	NS	24.	NS
5.	NS	25.	S
6.	S	26.	NS
7.	S	27.	S
8.	S	28.	S
9.	S	29.	NS
10.	NS	30.	NS
11.	S	31.	S
12.	NS	32.	NS
13.	NS	33.	S
14.	NS	34.	S
15.	NS	35.	S
16.	S	36.	S
17.	S	37.	S
18.	S	38.	NS
19.	NS	39.	NS
20.	S	40.	S

Procedure. Naive and sophisticated subjects were treated in the same manner. First, voluntary thresholds were obtained at 1000 cps by standard audiometry. The electrodes were then attached and the subject was instructed as follows:

> You will now hear a number of tones like the ones you just heard. This time do not raise your finger or indicate in any way that you hear the tones. Sit as quietly as possible. You may feel an electric shock in your hand at times during the test. The shock will not harm you, but it will be quite annoying. Try not to let the shock disturb you too much and remain as relaxed as you can.

Half the subjects in each group were then conditioned in a traditional manner to a 1000-cps tone according to a 40-item conditioning schedule (Table 1), while the remaining subjects were

conditioned by means of the rapid technique described above.

During the traditional conditioning procedure, the tone intensity was maintained at a level 30 db above the voluntary threshold. The tone duration was three seconds. Shock was introduced immediately following the tone on a 60 per cent random reinforcement basis. The shock duration was 400 milliseconds. Its amplitude was adjusted for each subject to the lowest setting which would consistently provoke a clear EDR. This level was determined just prior to conditioning by employing an ascending intensity series of shock stimuli until electrodermal responses were obtained to three consecutive shock presentations.

Subjects who underwent the rapid conditioning procedure received tones three seconds long, immediately followed by shock of 400 milliseconds duration. The initial shock intensity was set at one milliampere; all succeeding shocks were set at 2.5 milliamperes.

Once conditioning had been accomplished, a threshold search was made at 1000 cps. The same method of threshold determination was applied to all subjects regardless of the procedure by which they had been conditioned. Specifically, an ascending intensity series was initiated with the hearing loss dial reading set at −10 db. A three-second 1000-cps tone was presented at this and at each succeeding level in 10-db steps until an EDR was obtained in reaction to the tone. When the EDR occurred, it was reinforced with shock, and a descending series was begun five db below the response level and was continued in five-db steps, terminating at the level where no EDR was elicited by tone. Once this level was reached, an ascent in five-db steps was begun. Threshold was established as the lowest level where two electrodermal responses were obtained regardless of whether they occurred during an ascending or a descending series.

In order to determine whether rapid conditioning generalizes sufficiently to be used for clinical purposes, thresholds at 500 and 2000 cps were similarly obtained, without an intervening conditioning schedule, in those subjects who had been conditioned by the rapid method.

All electrodermal responses were traced on a moving tape by means of a heated stylus. In order that a stylus deflection be judged evidence of an EDR, it was required that the deflection (a) be initiated between one and three seconds after the onset of the tone, (b) possess a minimum slope of 10 millimeters per second, and (c) have a maximum amplitude at least 15 millimeters from the base line tracing. Inasmuch as the trace amplitude was affected by the psychogalvanometer sensitivity setting, the sensitivity control was adjusted initially for each subject so that the amplitude of random deviations to each side of the base line was approximately seven millimeters.

Extinction Trials

In order to assess further the clinical efficacy of the rapid electrodermal procedure, an estimate was required of the technique's susceptibility to extinction. For the exploration of this effect, 20 naive hard of hearing subjects who fulfilled the selection criteria of the original, naive group, were conditioned to a 1000-cps tone, 10 by means of the rapid procedure and 10 in the traditional way. Extinction trials were run

TABLE 2. Mean thresholds in db (re audiometric zero) at 1000 cps obtained by standard audiometry and two variations of electrodermal audiometry from naive subjects.

	Voluntary	*Rapid*	*Difference*	*Voluntary*	*Traditional*	*Difference*
Mean	47.0	44.5	2.5	55.0	53.0	2.0
S.D.	19.2	20.2	1.0	21.8	22.4	0.6

TABLE 3. Mean thresholds in db (re audiometric zero) at 1000 cps obtained by standard audiometry and two variations of electrodermal audiometry from sophisticated subjects.

	Voluntary	*Rapid*	*Difference*	*Voluntary*	*Traditional*	*Difference*
Mean	43.0	41.5	1.5	47.5	44.0	3.5
SD	17.8	19.2	1.4	19.6	21.2	1.6

for all subjects, wherein successive tones were presented without shock reinforcement until the conditioned electrodermal response was eradicated.

RESULTS AND CONCLUSIONS

Table 2 exhibits mean electrodermal audiometric thresholds for naive subjects obtained by rapid and traditional conditioning methods. These can be compared to respective voluntary thresholds reported in the same table. Such a comparison for subjects who had been conditioned with the rapid procedure reveals a difference of 2.5 db between the mean voluntary threshold (47.0 db) and the mean rapid EDR threshold (44.5 db). The comparable data for traditionally conditioned naive subjects show a departure by the average EDR threshold (53.0 db) from the mean voluntary threshold (55.0 db) of 2.0 db. These relationships suggest that essentially no difference in validity exists between thresholds obtained following each of the two conditioning methods, as judged by their agreement with voluntary responses.

Standard deviations of 19.2 and 20.2 are associated with the means resulting respectively from the voluntary thresholds and rapid EDR thresholds yielded by the naive subjects. The concomitant standard deviations for the traditionally conditioned naive subjects are, respectively, 21.8 and 22.4. Two facts are suggested by these measures of variability: (a) The numerical magnitudes indicate that the populations sampled included a fairly representative range of hearing impairment. (b) Added confidence can be placed in the EDR thresholds on the grounds that they were generally no more variable than those resulting from standard audiometry.

Mean EDR thresholds yielded by sophisticated subjects as a result of the two types of conditioning and these subjects' volunteered responses are shown in Table 3. The group that received rapid conditioning yielded a mean EDR threshold (41.5 db) which was only 1.5 db discrepant from the mean voluntary threshold (43.0 db). The traditionally conditioned group's mean EDR threshold (44.0 db) departed from the average standard audiometric threshold (47.5 db) by 3.5 db.

TABLE 4. Mean number of tonal presentations required to extinguish the conditioned electrodermal response after traditional and rapid conditioning.

	Traditional	*Rapid*	*Difference*
Mean	16	14	2.0
SD	4.4	5.8	1.4

Furthermore, standard deviations of 17.8 and 19.2 are associated with the means obtained respectively by voluntary response and the rapid EDR technique. The comparable standard deviations for the traditionally conditioned subjects are 19.6 and 21.2. The sophisticated subjects, like their naive counterparts, possessed a substantial range of hearing impairment. In addition, the thresholds derived by means of traditionally conditioned electrodermal audiometry were essentially as variable as those obtained with standard audiometry.

On the basis of these findings, it is concluded that the thresholds obtained by traditional conditioning and the rapid EDR procedure are equally valid. With this conclusion in mind, the question of EDR extinction remains to be considered.

Table 4 shows the average number of tonal presentations required to adapt the electrodermal response in 10 subjects who had experienced rapid conditioning and in 10 who had received traditional conditioning. The traditionally conditioned subjects required an average of 16 trials for extinction of response, whereas EDRs traced by the rapidly conditioned subjects were obliterated after an average of 14 presentations. It is suggested that electrodermal responses, conditioned with a lengthy stimulus schedule, may be somewhat less subject to extinction than if conditioning is achieved in the rapid way described above. This difference in extinction rate is relatively small, however, and should in no way limit the clinical application of the rapid electrodermal method.

Inasmuch as the results of the present study indicate that there is essentially no difference between electrodermal audiometric thresholds obtained by means of the brief method described above and those thresholds achieved through a lengthy conditioning procedure, it seems reasonable to conclude that economy of clinical operation warrants the use of the shorter method.

It should be re-emphasized that the technique described is probably applicable only to persons who are capable of making a conscious association between the conditioned and unconditioned stimuli. In this way it is probably limited to a population of most adults and children who are old enough to make this association. Whether such a method can be used successfully with very young children or with adults who have systemic diseases or psychological abnormalities which preclude the necessary conceptual associations is open to question. For the majority of adult cases, however, the procedure provides the audiologist with an efficient means of establishing the electrodermal audiometric threshold.

SUMMARY

A technique for the rapid, electrodermal conditioning of adults to a pure tone is described. The validity of thresholds obtained by this method is compared with the validity of thresholds obtained through a traditional conditioning technique. The extinction rates of the two procedures are com-

pared. Essentially no differences in either validity or extinction characteristics were found between thresholds obtained after the two types of conditioning. It is concluded that the rapid conditioning procedure is economical of time and provokes less fatigue and discomfort than does traditional electrodermal conditioning. Its use is recommended for testing adults and older children.

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A Device for Free-Field Monitoring of Delayed Speech Feedback

- *Ross H. Copeland*
- *Norman Halpain*

During the past 10 years there has been increasing interest in the effect on speech of the introduction of time delays into the auditory feedback system. In the main this interest has centered around the vocal disturbances and the disruption of the speech process resulting from the time delay. The possibility that delayed feedback might be used as an adjunct to speech training has not been experimentally investigated. Fairbanks (*4*) briefly suggested the feasibility of using delayed feedback as a speech training device by extending the time-delay interval to permit what he designated as 'immediate feedback,' and Anderson and Knauf (*1*) offered suggestions for mechanical revisions which would increase the clinical effectiveness of tape recorders.

As a part of the experimentation of the Parsons Research Project, the effect of delayed feedback on the efficacy of other types of reinforcements in increasing the frequency of verbalization was investigated by Copeland (*3*). The experimental group was composed of institutionalized mentally retarded children who were severely deficient in language development. During the process of a pilot study it was observed that headset monitoring was particularly difficult to achieve with mentally retarded subjects since the children were often frightened by the prospects of wearing the earphones. Also, the experimental setting was one which allowed for the free play of the subjects, and the mobility of the subject in the experimental room was seriously restricted by the necessary wire connections of the headset. Consequently, it was desirable to present delayed feedback signals for the *free-field* monitoring of the subjects. Since reports of the applications of delayed feedback have been limited to citations of *headset monitoring*, it was necessary to develop equipment for providing free-field, delayed-feedback conditions.

Problem

The experimental room was equipped with ceiling-hung microphones. The delayed-feedback recorder, similar to that described by Lee (*5*), Black (*2*), and Fairbanks (*4*), was housed in a connecting room. If the delayed signal was to be fed back into the experimental room and subsequently through loud speakers instead of the traditional earphones, the obvious problem of 'echo effect' had to be overcome. In free-

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field monitoring of delayed signals, the original, spoken signal goes first to the microphone, then to the variable-time-delay recorder, then to the amplifier, and finally to the loud-speakers. The problem is to keep the signal from being re-received by the live microphones and being re-introduced into the system. The resulting multiple echoes fade only as a result of the ultimate line loss.

Several experimental electronic systems were tried, which opened the circuitry of the microphones at the time that the delayed signal was being transmitted through the loud-speakers. This approach was partially successful in that it did prevent multiple echoes. However, when the system was 'at rest,' the loud-speakers and the microphones were simultaneously live. This condition allowed for a within-system-feedback to occur, which began at a very low level of intensity and gradually built in intensity until it reached a level which triggered a relay which damped the noxious sound.

Subsequent refinements were designed which allowed for the loud-speakers and microphones to be operated 180 degrees out of phase. In this way when one of the components was 'on,' the other was 'off,' and vice versa.

An additional problem which had to be met was the question of what time delay would be employed. Because of the nature of the minimal language development of the subjects involved, it was decided that a delay which allowed for the utterances of 1.00 second of speech would be experimentally feasible. It was then vocally possible for the subject to produce a signal varying in length from the most momentary phonation to one full second of speech,

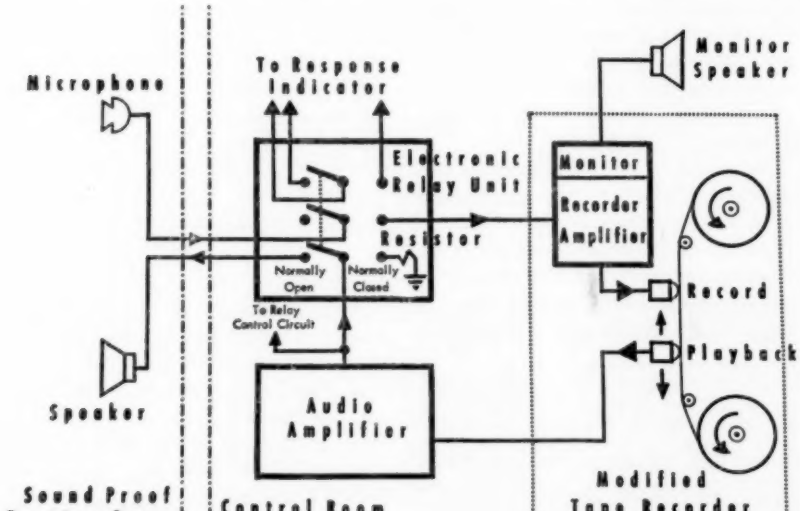

FIGURE 1. Block diagram of delayed playback system.

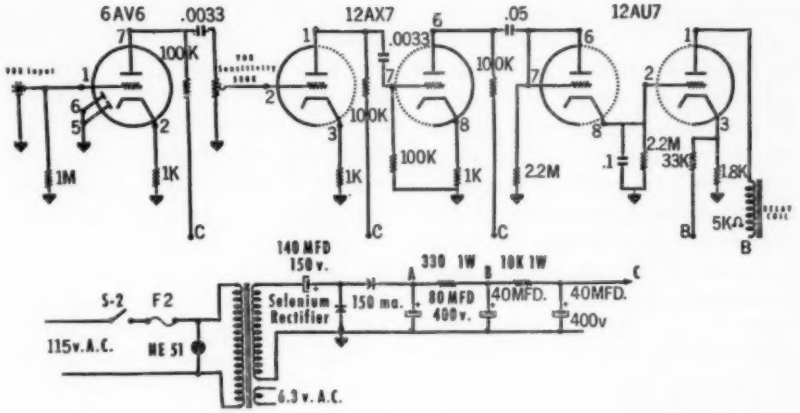

FIGURE 2. Schematic of voice-operated relay.

and then to hear himself via the loudspeakers.

APPARATUS

The sequence of operation of the delayed playback system is shown in the block diagram in Figure 1. The contacts of the electronic relay are shown in the normally closed position. When a sound is made by the subject, it is recorded and reaches the playback head after one second. The playback signal then goes through the audio amplifier and immediately to the relay control circuit. The relay is energized, switching the audio signal to the speakers. After the response is completed, the relay automatically resets for the next sound. Because of the time involved in closing the relay contacts, a bit of the sound may be lost at the beginning of a phonation. A faster relay and control circuit would be a solution to this problem.

The schematic diagram of the relay control circuit is shown in Figure 2. The function of the first three tube sections is to create a D.C. voltage at the control grid of the relay control tube when an audio signal is received at the input. The current through the relay control tube energizes the relay. It will remain energized as long as the D.C. voltage is present on the control grid, that is, as long as an audio signal is received.

SUMMARY

The delayed feedback phenomenon was investigated in connection with reinforcement schedules in language training. Traditional headset monitoring was found to be impracticable with the experimental population, which was composed of a group of mentally retarded children who were severely deficient in language. An instrument was developed which allowed for the free-field monitoring of delayed-feedback signals.

As a result of the use of the voice-operated relay (VOR), it is possible for one full second of speech to be re-

corded. Unfortunately, the duration of the recording time and the duration of the free-field playback monitoring are inflexible. In other words, if the subject produces multiple phonations the duration of which is in excess of one second, the delayed feedback signal via the loud-speakers will present only the first second of the production. Moreover, should the subject offer further speech production during the delayed feedback of his previous verbalization, the speech production will not be recorded until the end of the one-second delayed feedback has occurred. This limitation, however, was not of major importance during this experimentation because of the minimal language production of the subjects. Only on rare occasions was it expected that the subjects would offer verbalization which exceeded one second's duration.

An additional equipment design is being investigated which may increase the flexibility of this instrument. Elaboration of variable-time-delay positioning of the recording and playback heads may allow the instrumentation to respond automatically, in terms of duration of the delayed feedback, to the variable duration signals provided by the subjects.

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Healing

I would like to propose again as a 'new discovery' what every physician is taught and comes to know through his studies in physiology—that 'healing' is rooted in the body system, and that at best, the therapists cooperate with 'Nature.' *They* do not cure, nor do their medicines or surgical procedures. Probably the *confidence* which the patient has in the physician (or in the witch-doctor, chiropractor, or in Lydia Pinkham) is the signal, trigger, occasion, or the psychological manifestation of the self-healing 'spirit' which welds the body system into its optimum illness-combating and illness-resisting organization. (From Sidney M. Jourard, 'The Role of Spirit and "Inspiriting" in Human Wellness.' Draft for discussion purposes, University of Florida, 1959.)

A Retraining Program for the Adult Who Stutters

• *Louise R. Kent*

The purpose of this paper is to describe the retraining process for the adult within the framework presented by Williams (*1*). In essence, Williams says that stuttering is not a 'thing' which possesses an independent existence or a 'mind of its own' which can refuse to obey the person in which 'it' resides. Stuttering is learned behavior which, like all learned behavior, can be modified. An attempt has been made here to sketch a possible application of Williams' point of view to the actual clinical situation.

Since no two individuals behave in exactly the same way when they stutter and since no two individuals who stutter cherish the same beliefs about stuttering or have experienced the same behavioral histories in which stuttering was a pivotal point, the clinician must approach each new case with no preconceived expectations or specific plans. In the initial interviews the clinician should endeavor to determine from observation what the client is doing that interferes with the forward flow of speech. From careful attention to verbal content contained in responses to leading questions, the clinician should seek to determine the person's pertinent beliefs about what is wrong with his speech and about what is likely to be of help to him. Leading questions which have proved helpful in eliciting this information are: (a) What do you think 'causes' you to stutter? (b) What 'happens' when you stutter? (c) What have you done to stop stuttering? (d) What instructions do you give yourself when you start to talk? (e) What is 'normal' speech? (f) How do you think your speech differs from 'normal' speech?

Faulty or unrealistic beliefs about what is wrong with the way he talks and about what might remedy this situation should be discussed systematically in subsequent interviews. Through such discussions the clinician can lead the client to question his beliefs, to test them in actual speaking situations, to reevaluate his beliefs on the basis of how he behaved while testing them, and ultimately to change them.

Before the client can be expected to accept the responsibility of changing the way he talks to approximate more closely the way normal speakers talk, he first must come to accept the premises which are fundamental to the clinician's point of view. As Williams (*1*) says,

> When a therapist begins working with a person who stutters he trains that person to think the way he, the therapist, thinks. . . . He tries . . . to train the speaker to approach his problem in the way in which he, the therapist, approaches it, to use the language he uses, and to make the assumptions he makes.

The clinician cannot gain acceptance of his assumptions on the part of the client by merely stating them. The client must be prompted actually to

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test the clinician's assumptions and his own beliefs, which may conflict with those of the clinician, in actual speaking situations. He will begin to change his beliefs only through his own experience. A few fundamental assumptions will be described here.

Fundamental Assumptions

Speech Is Learned Behavior. We do not observe speech behavior in newborn babies nor do we observe it in individuals who have been deprived of a talking environment. People learn to talk. The particular ways that a person talks which distinguish his manner of speaking from that of other individuals are attributable to that particular person's life history which is unique in millions of minute ways from the life history of any other human being. Even though no two individuals speak in exactly the same way, most speakers speak in ways that are similar enough to be classified as normal. If a person stutters, the way he speaks is different enough from the way that most people talk to be classified by both the speaker and listeners as other than normal. The person who stutters has learned to speak in particular ways that distinguish the way he speaks from the way most people speak; he has learned to do things when he talks that are foreign to the behavior of most people when they talk. He was not born doing these things and he did not begin to do them because of any error in his nervous system, respiratory system, liver, larynx, or little finger. He has learned to talk the way he does. If he wants to learn to talk some other way, the way that most people talk, he can learn to do this, too.

Learning to Change the Way We Talk Is Much like Learning Any Other Complicated Skill. In order to improve one's proficiency in the performance of a complex skill, one expects to 'practice' the performance of this skill. Even when one has learned to perform a complex skill well, for example, typing, one expects to make 'mistakes.' Knowledge of what constitutes mistakes and precisely how one makes them helps one to do something else. A person must know what behavior he wants to change and what he wants to substitute in order to modify his behavior in a consistent manner. And he must practice making this substitute response in order to increase the ease and the skill with which he makes it.

In an effort to illuminate beliefs of the client concerning this assumption, the clinician may want to seek the answers to the following questions: What does the client want to change about the way he talks? What does he do that interferes with the forward flow of speech? Why does he do this? Does he think this behavior helps him to talk? How can he expect behavior which interferes with talking to help him talk? Does he think this behavior hides or keeps him from making mistakes? What does he want to hide? Does he expect to change behavior that he is afraid to perform or tries to hide?

Goals for Speech Fluency Should Not Exceed the Fluency of Normal Speech. Perfection is not normal even for experts, and most people are considerably less than expert at talking. Observing the mistakes of others helps one to adjust his expectations for his own fluency to reasonable levels. A few questions may assist the clinician in bringing into focus the client's be-

liefs about fluency: Is normal speech his goal? How fluent does he believe normal speech is? How nonfluent does he believe speech can be and still be normal? How does he believe normal speakers cope with their sometimes frequent nonfluencies? If he did what he believes they do, would he consider himself a normal speaker? If he did what he believes they do, does he think other people would react to him as a normal speaker? How fluently will he have to speak before he will believe his speech is normal?

Assumptions Accepted

After and if the client comes to accept the clinician's assumptions through his own experiences, he should be quite certain that normal speech is an attainable goal. He should also be aware that whether or not he attains this goal is dependent upon his active participation in attaining it through the processes of observing, questioning, testing, and re-evaluating his beliefs in the light of his own behavioral experiences. This is a critical stage in the retraining process. The client may feel, with some justice, that he has been led into a semantic trap. He came to the clinician in order that the clinician might 'cure' him; now, the clinician demands that he 'cure' himself. This demand is difficult to accept. The client knows that to meet the demand will be difficult. It is the clinician's job to assist him in initiating the action which is necessary to set the process in motion.

In the clinical sessions the clinician should now attempt to elicit increased fluency from the client. The measures[1] used to elicit this increased fluency are unimportant; the net result should be to demonstrate to the client that he can speak normally—if only in a restricted situation. He must understand this fluency; it must not seem mysterious. He must understand that he speaks more fluently only when he does more of the things that a normal speaker does when he speaks and fewer of the things that he has learned to do which interfere with the forward flow of speech. *This is the only interpretation of increased fluency which is compatible with this approach.*

The clinician must prompt the client to accept the responsibility for actively 'working on his speech' outside the clinician's office. The client is dependent upon the clinician to answer the question: What should I do? This query must be answered with concrete suggestions which are based upon the specific behavior of that client. There are more general answers, however, which are applicable to all clients. A few of these answers will be presented here from the point of view of the clinician counseling the client:

> *Talk.* Do as much talking as you possibly can. Go out of your way to talk. If you find yourself backing away from something you are afraid you *might* do, find out what you *do* do. When you make a 'mistake,' keep talking. This is what normal speakers do and this is one of the things you must practice doing in trying to do more of the things that normal speakers do when they talk.
>
> Talk to as many different people in as many different situations as possible. You have spent years learning to talk the way you do; you have talked in every conceivable situation. Do not be misled by accidental contingencies which might lead

[1] Choral reading, recitation of memorized material (nursery rhymes, counting, naming the months of the year, days of the week, etc.), reading under specially contrived reinforcement conditions, shouting, reading or talking above a high noise level, etc., may be used to elicit increased fluency.

you to believe that you have discovered 'a technique to make the stutter go away.' There are no such techniques. Rather, concentrate on the discovery that stuttering is contingent only upon what *you* do. Although mistakes will be made when attempting to master some new behavior, these mistakes will, with continued constructive practice in a variety of situations, decrease in number and in degree to be replaced by the new desired behavior. You must strive for and look for improvement rather than a 'cure.'

Be Afraid. In the past you may have come to believe that 'fear' in a situation inevitably results in your stuttering. This is a belief which should be tested. Although being afraid that you will stutter makes you uneasy, this fear alone cannot keep you from talking. Observe how many times you keep talking in spite of this fear of stuttering if you continue to do the things which are necessary in order to maintain the forward flow of speech, i.e., continue to move forward from one sound to the next. With practice you may find that you will improve in your ability to move forward from sound to sound and from word to word in spite of the fear that you will stutter. As you improve, you may find that more and more of the time you will be less and less afraid you will stutter.

Be Embarrassed. If people react to your speech in ways that embarrass you, be embarrassed, but keep talking. You have a problem just as almost everyone has a problem; unlike most people, however, you are doing something about yours. Being embarrassed cannot keep you from talking.

Make Mistakes. If you keep talking, you are bound to err occasionally. Everyone does. When you do, make yourself aware of precisely what you are doing that is interfering with the process of talking. Then, change what you are doing *while you are doing it* and keep talking.

Conclusion

Once the client has accepted the responsibility for changing the way he talks and has begun to participate actively in bringing about this change—both within and without the clinician's office—the clinical sessions may drift away from direct work on speech. The client can do this work for himself.

The clinical sessions may tend toward discussions of the client's recent efforts, successful or otherwise, to change the way he talks. During the course of these discussions, personal problems and life-history material may emerge very naturally because the way a person talks and *that person* are inextricable. If the client is able to review his personal history, distinguish circumstances that may have contributed to his problems, view objectively the reason and at the same time the lack of it, the time will be spent fruitfully.

Termination of the retraining program is indicated when the client is confident that he can independently continue the task which he undertook with the clinician's support. He must realize that he may from time to time revert to old speech patterns. He will view this possibility and be prepared to view the reality with little fear or panic if he has come to believe that the way he talks is dependent solely upon the way he talks and not upon some mystical something's capricious whims.

Summary

This paper is a description of retraining for the adult based on the assumption that stuttering is learned behavior. Fluency must be understood as a natural result of doing more of the things that a normal speaker does when he speaks and fewer of the things that interfere with the forward flow of speech. The goal of the retraining program described is not only to modify the speech behavior of the client but also to modify his belief system about speech.

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Covert and Overt Maternal Rejection in Stuttering

• *Donald Butler Kinstler*

Parental acceptance or rejection of the child is believed by a number of speech clinicians to be a primary factor in the etiology of the stuttering symptom. Although the direct actions of parents toward their children are unquestionably critical, perhaps far more important for the children's mental health are the parents' underlying feelings and attitudes. Symonds (*14*, p. 13) has stated this very precisely, 'The essence of parent-child relations . . . lies more in how a parent *feels* than in what a parent *does*.' Baldwin, Kalhorn, and Breese (*1*), in a detailed observational study of parent-child relationships, reached the conclusion that 'acceptance-rejection is the fundamental dynamic: it is the amount of acceptance which determines and delimits the other aspects of parental behavior.'

Horney (*6*, p. 80) has described the covert or subtle rejection of the child as essentially devastating. She says that, in the childhood history of neurotic patients, she finds that 'the basic evil is invariably a lack of genuine warmth and affection' and that this is all the more shattering if this lack is hidden or disguised.

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Clinical observation based upon individual and group psychotherapy with stutterers suggests that one of the strongest feelings of many stutterers is the feeling of covert or hidden rejection by the mother. Judging from the reports of stutterers in therapy, overt or undisguised rejection on the part of the mother is less damaging.

Parental attitudes containing rejection as a hidden element constitute more of a trap for the child than outright rejection, which would allow him to hate his parents for their unfair behavior. The parents do not give love, but at the same time they either cannot see this or they do not allow themselves to recognize it. They pretend to be acting in the child's best interests and thus allow him no legitimate or justifiable outlet for his aggression. He is constantly frustrated, but he may not express the resulting hostility. He is forced to repress his aggressive feelings and, having learned that speech can be a weapon, he must withhold this most natural vehicle for the expression of his feelings. This might result in no speech at all, which in our culture is nearly impossible for any appreciable length of time, or it could result in a partial involuntary withholding of speech—stuttering.

A number of studies deal with parental attitudes and their influence upon personality development. Witmer (*15*) found that parental attitudes were useful as an index of probable success in

clinical work with children. Symonds (*14*, pp. 18-28) reported correlation between child behavior and parental rejection. Levy (7) described relationships between the child's pattern of adjustment and maternal overprotection.

In the field of speech pathology there have been very few reported attempts to measure parental attitudes in the etiology of stuttering. Darley (*4*, pp. 142-143), comparing the responses of parents of stutterers with a control group, found only minute differences in the attitudes of the two groups. Moncur (*10*) attempted to evaluate the parental domination of the child as a possible factor in the development of stuttering, with somewhat inconclusive findings. Duncan (*5*) used the Bell Adjustment Inventory to analyze the general relationships within the home of the stuttering child and found that the home adjustment of the stutterer is comparatively poorer than that of the child with normal speech. McCarthy (*8*) found that the parents of stutterers tend to be 'tense, perfectionistic parents . . . whose overprotectiveness is often a disguise for real rejecting attitudes.'

In spite of the fact that there has been surprising agreement among authorities as to the relevance of parental attitudes to the emotional difficulties of children, there have been very few studies dealing with attempts to devise scales or measuring devices in order to evaluate these attitudes. Merrill (*9*) and Brody (*2*) employed the method of direct observation which, while of demonstrable value for research, offers little practical help for the practicing clinician. Champney (*3*) developed the Fels Parent Behavior Scale which provides a more readily usable measuring instrument but has the limitations of being time-consuming and expensive and of requiring the use of trained personnel. The inventory questionnaire as used by Darley (*4*), Shoben (*12*), Stogdill (*13*), and Sears, Maccoby, and Levin (*11*) seems to offer a number of advantages, ease of administration, economy, and comprehensiveness of information obtained.

Problem

This study was formulated in an attempt (a) to create a usable scale which would differentiate between the attitudes of mothers of stutterers and the mothers of children with normal speech and (b) to test the clinical hypothesis that the mothers of stutterers reveal a greater degree of covert or hidden rejection than do the mothers of normal speakers. Corollary hypotheses were that the mothers of stutterers display less overt or manifest rejection, less covert or hidden acceptance, and more overt acceptance than do the mothers of normal speakers.

This formulation was based upon a concept of covert rejection, the implication of which was that the mother may not and will not openly reveal her lack of love for the child. Therefore, it was hypothesized, she will avoid rejecting her child openly and will display much overt or manifest acceptance while she withholds the covert or implicit acceptance which depends upon her basic satisfaction with the child and respect for his individuality.

Procedure

It was decided to create a scaling model in the form of a self-inventory questionnaire. A projective question-

naire was constructed which consisted, in its final form, of 92 statements combining general statements of opinion and statements more directly revealing the subjects' own practices. Subjects were required to make a forced choice expressing 'agreement' or 'disagreement' with each item on a six-point scale ranging from 'strongly agree' to 'strongly disagree.'

The following items comprise the U.S.C. Maternal Attitude Scale used in this study. Items 59 and 78 were omitted.

1. I'd prefer not to have any more children.
2. I believe parents need to have holidays from children.
3. Children should be told to say, 'I love you.'
4. I should listen to my child whether interested in what he's saying or not.
5. I feel better when I buy my child a gift.
6. A child should be made to feel what he should do without my having to order him to do it.
7. I should always act as if I love my child even if I don't.
8. I try not to express anger with my child openly.
9. I always try to do what's best for the child's sake whether he likes it or not.
10. A mother should sacrifice her own desires for what is best for her children.
11. A mother should help her children even if they don't request help.
12. A child should be a good reflection on his parents.
13. I feel it is my duty to show my child that what I want is for his sake.
14. Any parent should be proud to have a child who is almost always well-mannered.
15. Any parent should be proud to have a child who keeps himself neat and clean.
16. Any parent should be proud to have a child who hardly ever is noisy and quarrelsome at home.
17. Any parent should be proud to have a child who does what he is told most of the time.
18. Any parent should be proud to have a child who has rarely shown any sexual curiosity.
19. Any parent should be proud to have a child who was toilet-trained early.
20. Any parent should be proud to have a child who rarely cries.
21. Any parent should be proud to have a child who is weaned early from the bottle.
22. Self-control and self-sacrifice are two of the most desirable traits of a good mother.
23. A baby can be spoiled if he is picked up whenever he cries.
24. A child will be spoiled if he gets his own way too much when he is small.
25. A mother should stop nursing her baby if her doctor tells her he is big enough for a bottle.
26. I find my child exceptionally attractive.
27. A mother should be proud to have a baby who is weaned early from the breast.
28. It's quite normal for a mother to be relieved when her children start school.
29. Children restrict the social activities I would like to have.
30. Children should learn not to upset a neatly kept house.
31. It is better for a child to learn to leave things alone than to have to put things out of his reach.
32. Playing with children should wait until the housework is done.
33. It is better for a mother to hold in her anger when upset by her child's conduct.
34. A mother should intervene in children's quarrels if there is a possibility that one might be hurt.
35. The older child should be held responsible in his play with younger children.
36. A baby should never be neglected, even if it makes the older child resentful.
37. A mother should encourage her child to follow the example of another child's good behavior.
38. It disturbs me when my child is not superior to other children.
39. I rarely forgot the feeding hour.
40. I more often punish the child by confinement to his room than by spanking.
41. I more often punish by removal of

privileges than by spanking.
42. Much delinquent behavior could be eliminated if parents taught their children control by stronger disciplinary measures.
43. The alarming growth in juvenile delinquency may be attributed in part to lax methods of discipline.
44. Most juvenile delinquency could be avoided if young people were kept busy.
45. I have often wished that I were single again.
46. Parents can control children by giving them gifts for good behavior.
47. If a child is warned enough about bad behavior, he may not have to be punished so much.
48. Turning over discipline to my spouse is often more effective than handling it myself.
49. Deliberate disobedience should be punished severely, especially if it might lead to endangering the child's health.
50. A good scolding seems to work better with my children than spanking.
51. I often have to 'keep after' my child to get him to do things.
52. The reason more 'gifted' children are from upper-class families is that these families have higher standards.
53. It is impossible to 'spoil' a baby by too much indulgence.
54. I am unconcerned when my child makes a mess around the house.
55. Neatness and orderliness are taught by early training.
56. There are many occasions when children should be seen and not heard.
57. A good way to increase a child's motivation to do better in school is to offer him a prize for improved grades.
58. I would be satisfied if my child made 'D' grades at school.
59. I should hear my child just as soon as he starts to cry at night even if I am asleep.
60. I pay little attention to my child's expression of 'mean' or hostile feelings.
61. I would like to have a trustworthy baby sitter two or three times a week.
62. I don't like children to play together if they don't get along with each other.
63. Parents should lavish their children with praise for their achievements at school.
64. My child is generally capable of making decisions for himself.
65. A child should be given music, dancing, or swimming lessons, even if he is not interested.
66. A parent should feel responsible for seeing his child do his homework.
67. A parent should expect his child to behave better in public than at home.
68. I frequently try to help my child by correcting his mistakes.
69. I don't like my child to eat dirt or grass.
70. I like to hold my child whether he is dirty or clean.
71. I am apt to be impatient if my child interrupts me when I'm speaking to adults.
72. I spank my child when he is disobedient.
73. I always permit my child to have a light burning or his door open at night if he wants it.
74. I do not permit my child to climb tall trees.
75. I try to discourage my child from playing in mud and dirt.
76. I punish temper tantrums firmly and promptly.
77. It is easy for me to tell my child that I love him.
78. I feel that some of my child's friends are a bad influence on him.
79. I generally insist that my child eat what I believe to be best for him.
80. I dislike changing my child's dirty diapers.
81. A child should be disciplined when he soils his pants after he starts toilet training.
82. Parents should be disturbed if their child fails to progress at the rate they know he should.
83. Children should be allowed to fight freely with their brothers and sisters.

TABLE 1. Judges' ratings for 'agree' and 'disagree' responses based upon modal trends for each item; r = covert rejection; R = overt rejection; a = covert acceptance; A = overt acceptance; a/A = undifferentiated acceptance. One item was dropped because of lack of agreement, reducing the total number of items from 92 to 91.

Response	*r*	*R*	*a*	*A*	*a/A*	*Total*
Agree	70	7	4	10	0	91
Disagree	10	15	34	25	7	91
Total	80	22	38	35	7	182

TABLE 2. Comparison of subjects for age, age of children, education (years), education of spouses (years), index of status characteristics (Warner), and number of children in family.

	Experimental Group			*Control Group*		
	N	*M*	*R*	*N*	*M*	*R*
Age	30	34.03	23-45	30	34.80	24-44
Age of Children	30	7.46	3.5-14	30	7.25	3-14
Education	30	13.0	9-16	30	13.7	8-17
Education of Spouses	30	14.0	8-18	30	13.9	8-18
ISC (Warner)	30	42.9	30-60	30	42.6	30-58
Number of Children	30	2.63	1-7	30	2.70	1-6

84. I do not allow my child to say, 'I hate you.'
85. I allow my child to eat pretty much what he wants.
86. If my child sucked his thumb, I would try to discourage him by some form of discipline.
87. Children should be permitted to talk whenever they wish.
88. It is better to let a baby cry it out than to pick him up every time he cries if there seems to be nothing wrong with him.
89. I am greatly annoyed when my child whines or cries for long periods.
90. I don't let my child use crying as a device to get out of a bad situation.
91. I meet my child's demands for attention with firm but moderate discipline.
92. Mothers should feel free to work outside the home if they can find a good baby sitter for their children.

The subjects of this study were 60 white urban mothers, of whom 30 mothers of stuttering children comprised the experimental group and 30 mothers of children with normal speech comprised the control group.

The two groups were matched as closely as possible for age, education, socioeconomic status, and incidence of psychological counseling or therapy. Age and sex of children, number of children, religion, and education of husbands were also matched although it was believed that these factors were not critical.

A description of the attitude universe is necessary in order to determine whether a scale measures this universe. One method of determining whether a scale does measure its universe (or is intrinsically valid) is to study the judgments of a group of experts. To judge the individual items, 26 experts were selected, including clinical psychologists, psychiatrists, professors of speech pathology, professors of psychology, and speech pathologists in private practice. Each judge was requested to evaluate the scale as if a subject had answered the questionnaire with all 'agree' responses or as if all responses had been 'disagree.' The judges' ratings were tabulated and the modal trend for each item was considered to be

TABLE 3. Responses favoring covert rejection when paired with covert acceptance, implied acceptance, overt rejection, and undifferentiated acceptance.

Group	*r-A*	*r-a*	*r-R*	*r-a/A*	*Total*
Experimental	15	24	12	5	56
Control	11	10	0	2	23
Total	26	34	12	7	79

TABLE 4. Responses favoring overt rejection when paired with covert acceptance and when paired with overt acceptance.

Group	*R-a*	*R-A*	*Total*
Experimental	0	3	3
Control	4	4	8
Total	4	7	11

TABLE 5. Selection of covert acceptance when paired with covert rejection and overt rejection, of overt acceptance when paired with covert rejection and with overt rejection, and of undifferentiated acceptance paired with covert rejection.

Group	*a-r*	*a-R*	*A-r*	*A-R*	*a/A-r*	*Total*
Experimental	10	4	11	4	2	31
Control	24	0	15	3	5	47
Total	34	4	26	7	7	78

the valid rating for that item in terms of overt or covert rejection, or overt or covert acceptance (Table 1).

When the two groups were compared for age, education, socioeconomic factors, religion, size of family, and psychological guidance, the two groups showed no appreciable differences. On the contrary, the two groups seemed to have been remarkably similar, as is shown in Table 2.

RESULTS

The results of the pairings with the covert rejection category are shown in Table 3. The total number of responses favoring covert rejection was considerably greater for the experimental group (56 to 23) with the largest difference between the two groups falling in the covert rejection-overt rejection category (12 to zero) and the next largest difference in the covert rejection-covert acceptance category (24 to 10). Grouping those responses favoring overt rejection is shown in Table 4. The total number of responses favoring overt rejection was greater among the control group (eight to three) with the largest difference in the overt rejection-covert acceptance category (four to zero). Reversing the pairings in order to measure covert and overt acceptance is shown in Table 5.

The experimental group showed more accepting responses only in the categories of covert acceptance-overt rejection (four to zero), and overt acceptance-overt rejection (four to three). When acceptance was paired with overt rejection, the experimental group tended more to choose acceptance, but when the acceptance was paired with covert rejection the experimental group tended more toward covert rejection. These pairings of responses are consolidated in Table 6.

Chi-square test for significance, when applied to these responses, yielded a value of 28.65. Since for four degrees of freedom p is 13.277 at the .01 level of confidence, these responses may be considered to be significant at far better than the .01 level of confidence.

This result was based upon the differences in proportion of response to each category for each group, derived by the method described earlier, and included all items which exhibited small differences which were discriminative and constituted trends toward agree-

TABLE 6. Total responses favoring covert rejection, overt rejection, covert acceptance, overt acceptance, and undifferentiated acceptance. The scale originally contained 92 items. One item was dropped because the judges could not agree upon its evaluation and one item did not discriminate between the two groups, bringing the total to 90 items.

Group	*r*	*R*	*a*	*A*	*a/A*	*Total*
Experimental	56	3	14	15	2	90
Control	23	20	24	18	5	90
Total	79	23	38	33	7	180

TABLE 7. Consolidation of acceptance and rejection responses.

Group	*Acceptance*	*Rejection*	*Total*
Experimental	31	59	90
Control	47	43	90
Total	78	102	180

ment with the category, as well as those items which discriminated at the higher levels of confidence.

Each of the six pairings was examined in detail in order to measure the effect of differences in choice upon the subjects. Because of space limitations these results are not presented here although reference will be made to the data in the discussion section.

TABLE 8. Items discriminating at .01, .05, and .10 levels of confidence.

	.01 Level	*.05 Level*	*.10 Level*	*Total*
Number of Items	3	6	10	19

Consolidation of all acceptance and rejection responses is shown in Table 7. These responses are significant at the .02 level of confidence (chi square is 5.8, one degree of freedom) with the experimental group favoring rejection very nearly twice as often as it favored acceptance, in contrast to the control group's approximate 52 per cent acceptance and 48 per cent rejection.

Discrimination of Individual Items. Discrimination of individual items when tested by chi square revealed comparatively few items which were significant at the .05 level, and 10 items which were significant at the .10 level, as shown in Table 8. These items reveal a pattern very similar to the pattern obtained when all of the items are considered, as can be seen from examination of Table 9.

TABLE 9. Discriminating items favoring overt rejection, covert rejection, overt acceptance, covert acceptance.

Group	*R*	*r*	*A*	*a*	*Total*
Experimental	1	15	1	2	19
Control	4	2	2	11	19
Total	5	17	3	13	38

Based on responses to the most significant items, the experimental group favored covert rejection in a ratio of better than seven to one, but tended less toward overt rejection than did the control group, in a ratio of one to four. The control group heavily favored covert or implied acceptance in a ratio of better than five to one and favored overt acceptance by two to one. These results were quite similar to the results obtained with all items as can be seen by comparing Table 5 and Table 8. The differences in the two tables were in the direction of greater proportions of covert rejection and smaller proportions of covert acceptance for the experimental group when the highly discriminating items alone were considered. The trends obtained by tabulation of the highly discriminating items alone, therefore, simply intensify the trends discovered in analysis of all items.

Considering the results as a whole, although many items were not discriminative at levels which would rule out the possibility of chance occurrence of an individual response, the summation of the trends of the individual items revealed a consistent pattern which, when treated by chi-square analysis, displayed a response pattern which was significant at better than the .01 level of confidence. Therefore, the working statistical hypothesis, that the two groups

were drawn from the same population, must be rejected and the conclusion may be drawn that the observed differences were significant.

Discussion

The hypothesis that this study was designed to test, that the mothers of young male stutterers tend to reject their children in a covert or hidden fashion more than do the mothers of young nonstuttering males, was based upon clinical observations made by the experimenter and by others practicing in the field of speech pathology. Although many clinicians have long suspected that rejection is an element in the mother-child relationship which might contribute to the phenomenon of emotional disorder in the child, relatively few have investigated the significance of the kind of rejection involved. Clinical work with male stutterers has often revealed the apparent paradox that many male stutterers, while seemingly incapable of recalling any specific rejective acts or rejective attitudes on the parts of their mothers, have nevertheless described a vague intuitive awareness of being rejected.

It was suspected that this vaguely felt rejection was real and that the mother did reject the child in ways which were not easily perceived or understood by him. The corresponding 'acceptance' of the child would then, at least hypothetically, tend to be of an obvious socially approved type while the more subtle or hidden acceptance which grows out of complete inner satisfaction with the child would be lacking or in relatively short supply. In so far as the U.S.C. Maternal Attitude Survey is a valid measure of the arbitrarily labeled concepts of covert and overt rejection and covert and overt acceptance, this theory seems to be substantiated by the results obtained.

The total number of responses in which covert rejection was favored was much greater for the experimental group. The experimental group mothers tended to favor covert rejection in 56 items as compared to 23 items in which the control group mothers favored this type of rejection. This is a ratio of almost two and one-half to one. The implication of this finding is that, although the mothers of young male nonstutterers also reject their children in a hidden fashion, they tend to reject in this way much less frequently than do the mothers of young male stutterers. This may account for the belief expressed by some stutterers that they feel rejected but cannot pin-point the source of this feeling or recall specific rejective actions which may justify or explain it.

The paired categories, between which the choices had to be made by the subjects, clearly affected their responses. When covert rejection was paired with the alternative of overt or open acceptance, the experimental group mothers chose covert rejection in 15 items as compared to 11 items chosen by the mothers of the control group. In this grouping there was only a slight tendency toward more covert rejection by the experimental group. This is possibly due to the tendency of these mothers to choose obvious and socially approved manifestations of love which can be perceived readily by the people about them. This 'acceptance' may be a means by which the mother's anxiety about her child can be alleviated.

In contrast, when covert rejection was paired with covert acceptance, the

experimental group preferred covert rejection in 24 items while the control group preferred covert rejection in only 10 items. The ratio, again, is almost two and one-half to one in favor of covert rejection by the experimental group. The experimental mothers tended to choose rejection when the alternative was implicit or hidden acceptance, which is not highly visible and which depends upon a basic internal satisfaction with the child and respect for him as an individual.

Perhaps the most dramatic difference occurred in the pairing of covert rejection with overt rejection. The experimental mothers chose covert rejection in all 12 items while the control mothers chose overt rejection for all 12. This finding seemed to substantiate the clinical observation that the mothers of stutterers were, at least superficially, nonrejecting in their relationships with their children. Straightforward and undisguised rejective acts may not be performed by the mothers of the experimental group, although they tend to reject their children in subtle hidden ways of which they themselves may not be aware.

The experimental group mothers differed very little from the control group mothers when overt rejection was paired with overt acceptance, choosing overt rejection in three items as compared to the choice of four items by the control group. The allure in overt acceptance for the experimental group is clearly demonstrated in this choice contrasted with its choice of no items favoring covert acceptance when paired with overt rejection.

Consolidating the acceptance responses, the experimental group chose acceptance in 31 items as compared with the control group's selection of acceptance in 47 items. The ratio is about one and one-half to one in favor of acceptance by the control group, but again the critical difference is apparent in the distribution of the categories. In the choice of overt acceptance there is little to choose between the two groups, but in the choice of covert acceptance the difference is marked. The control group chose covert acceptance in 24 items and the experimental group chose covert acceptance in only 14 items, a ratio of about eight to five. If the undifferentiated acceptance items (which are probably closer to covert than to overt acceptance in that they are not readily seen to be overt acceptance and thus not clearly socially approved) are grouped with the covert acceptance responses, the result is a score of 29 acceptance responses for the control group and only 16 acceptance responses for the experimental group. The ratio is then nearly two to one for the control mothers' selection of covert acceptance over the experimental group's choice.

Several generalizations based upon these findings may be stated: (a) Mothers of young male stutterers tend more to reject their children covertly than do mothers of young male nonstutterers. (b) Mothers of young male stutterers tend to avoid overt or obvious rejection of their children. (c) Mothers of young male stutterers tend to accept their children in overt, socially approved ways only slightly less than do the mothers of young male nonstutterers. The mother of the stutterer is seen by the casual observer to be a 'good' and accepting parent. (d) Mothers of young male stutterers tend

less frequently to accept their children in the covert or hidden ways which are the expression of the mother's inner satisfaction and contentment than do the mothers of nonstutterers.

Predicated upon the assumption that the judges employed in the study were truly expert in their evaluations of the categories and upon the assumption that the population tested was a representative one, the central hypothesis—that the mothers of young male stutterers tend to reject their children covertly rather than overtly, and that their accepting attitudes tend to consist more in open or manifest acceptance than in covert or implied acceptance—appears to have been rather directly corroborated.

The dynamics involving these concepts which are operative in the mother-child relationship might be hypothesized somewhat as follows: If a mother rejects her child in a hidden fashion, never giving him a reasonable justification for the hostility which inevitably arises from his frustrated needs for warmth and affection, she thereby lays the foundation for a basic insecurity. If she compounds this insecurity by manifestly accepting him in many of the socially approved ways while withholding the implicit acceptance which depends upon trust in him and respect for his identity, she cannot help but add to the unexpressed and inexpressible feelings of hostility within him. Because he can find no plausible justification for his surges of anger against an apparently blameless and devoted mother, his rage is accompanied by feelings of guilt which not only make it more difficult for him to vent his anger but add immeasurably to his misery. If, in addition, these events occur at about the time that he first learns that speech can be used as a weapon, it seems quite possible that this insecure and frustrated child, in his fear of expressing dangerous feelings, might find stuttering a relatively safe and anxiety-reducing symptom.

Undoubtedly the hypothetical case outlined, which is based upon a particular psychological viewpoint, is not a definitive explanation, and probably other elements contribute equally to produce the stuttering symptom. It may, however, serve to illustrate one fairly reasonable possibility in an area characterized by great uncertainty, diametrically opposed theories, and endless speculation.

The implications of this study should be of value in the treatment of stutterers, and in the guidance and counseling of the parents of stutterers. It is also possible that these implications may have a wider scope and that the same factors believed to be operative in the etiology of stuttering may apply to other emotional disorders growing out of disturbances in the mother-child relationship.

Summary

An experimental group of 30 mothers of young male stutterers and a control group of 30 mothers were matched for age, education, size of family, age of children, socioeconomic status, religion, psychological guidance, and education of spouses. Both groups were administered a projective-type questionnaire designed to measure covert rejection, overt rejection, covert acceptance, and overt acceptance. The results yielded significant differences in the pattern of responses. Chi-square analysis yielded

a value better than the one per cent level of confidence. Conclusions derived from this study include the following: (a) Mothers of young male stutterers reject their children covertly far more but overtly far less than do the mothers of normal speakers. (b) Mothers of stutterers accept their children covertly less and overtly only slightly less than do the mothers of normal speakers. (c) Mothers of stutterers reject their children more than they accept them while mothers of normal speakers accept their children more than they reject them.

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Devices to Avoid Becoming Known

I have come to believe that it is not communication per se which is fouled up in the mentally ill. Rather it is a foul-up in the processes of knowing others, and of becoming known to others. Neurotic and psychotic symptoms might be viewed as smoke screens interposed between the patient's real self, and the gaze of the onlooker. We might call the symptoms 'devices to avoid becoming known.' (From Sidney M. Jourard, 'Healthy Personality and Self-Disclosure.' *Ment. Hyg.*, 43, 1959, 499-507.)

Maximum Auditory Perception (MAP) Word List

- *George S. Haspiel*
- *Richard H. Bloomer*

The terminal stage in an auditory training program usually consists of exercises designed to give the child with impaired hearing practice in discriminating the various phonetic elements in word combinations. Unfortunately, there has been little mention in the literature of what constitutes a logical sequence of phonetic elements for the auditory training of the child with a hearing loss. A need exists, therefore, for an ordered vocabulary designed to train these children to hear the differences between the phonetic elements and between words.

The Maximum Auditory Perception (MAP) Word List is a systematic grouping of monosyllabic words used in the English language. It permits the clinician to develop those skills necessary to distinguish between phonetic elements in word combinations. Since auditory training is seldom done in isolation from other aspects of speech and hearing programs, consideration has been given to the ease with which the sounds are produced and their usefulness in making meaningful words as well as to the difficulty of discriminating them from other sounds. However, this last factor has been of primary importance in the development of this list.

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Procedure

Sequence of Sounds. Each sound was chosen to succeed the preceding one on the bases of discriminability, developmental order, and frequency of occurrence.

Discriminability. Discriminability of all phonetic elements was determined from a Sound Discriminability Index (*1*) which was ascertained from the combined judgments of 40 college students. The judges placed the elements in a sequence in which the sounds which were more similar were rated with lower difference scores than those with less similarity. The sum of the judgments was then converted to a stanine scale (*3*, p. 306) for use in scoring the MAP words.

Developmental Order. The second criterion in the selection of sounds was their time of occurrence in the developmental sequence of the normal auditor's speech (*4*). The combined speech and hearing programs employed with most children with hearing problems are facilitated by such a consideration. In speech correction, retraining usually follows an order of natural development; in auditory training, the children

participate actively in the various exercises and must hear their own voices carrying correct acoustic information. If two sounds were found to have the same discriminability index, the earliest occurring one in the developmental sequence would be chosen for presentation.

Since vowel sounds are relatively homogeneous in their time of correct production, they were assigned their order in terms of their discriminability and frequency of use. Pure vowels were first in the sequence while dipthongs and semi-vowels were restricted to end positions.

Frequency. For each sound frequency of use was determined according to Dewey (2, p. 125). Since the correct discrimination of more frequently employed sounds will be of greater initial value than less frequent ones, this factor was incorporated in the MAP list. Thus, if the Sound Discriminability Indices for two sounds were identical and if they occurred at approximately the same point in the developmental scale, the sound more frequently used was given preference in the construction of this vocabulary.

By using the above procedure, the following sequence of phonetic elements was developed:

a as in *tap*	*d* as in *did*
n as in *nat*	*-e-* as in *fed*
t as in *ton*	*s* as in *sat*
k as in *cat*	*v* as in *van*
ee as in *feed*	*a(r)* as in *park*
h as in *bat*	*ng* as in *sing*
u as in *mut*	*o²o* as in *book*
ch as in *chin*	*p* as in *pat*
m as in *mat*	*sh* as in *ship*
i as in *tip*	*ur* as in *curve*
g as in *gas*	*f* as in *far*
th (voiceless) as in *thin*	*o¹o* as in *boat*
aw as in *thaw*	*th²* as in *this*
h as in *him*	*i-e* as in *bike*
	j as in *jam*
a-e as in *ate*	*l* as in *lap*
wh as in *what*	*oi* as in *boil*
o-e as in *bone*	*y* as in *yes*
z as in *doze*	*u-e* as in *use*
ou as in *out*	*r* as in *run*

Orthographic representation of the English phonetic elements has been made with the Northampton Symbol System (*5*, pp. 1-20) rather than the traditional IPA since the authors feel that this more usable form has greater value for the child.

Selection of Words. The MAP word list is composed of meaningful combinations of the sounds which introduce a new section of the vocabulary and of all preceding sounds. It permits an optimum teaching situation for the aquisition of new listening skills since the only unfamiliar item introduced as each sound is taught is the sound itself. The criteria for the selection of words were the following: (a) Only meaningful words and monosyllabic words without blends were included. (b) Archaic, taboo, proper noun, past tense (except where vowel is changed), and plural words were not included.

Each of the words in the MAP word list is accompanied by a number which is its Sound Discriminability Index. The number represents the relationship between the sounds in the word in linear sequence as they are discriminable from one another and is obtained by summing the stanine scores of the judgments of the difference between the succeeding sounds. Thus, the larger the number the more discriminable are the sounds within a word. An optimum teaching procedure would consist of introducing each new section with maximally discriminable words and working toward those which are least easily discriminated.

MAP Word List

Sound -a-
Sound n
an (7)

Sound t
at (7)
gnat (14)
tan (14)
tat (14)

Sound k
can (15)
cat (15)
knock (11)
tack (15)

Sound -ee-
eat (6)
tea (6)
key (6)
keen (12)
knee (6)
neat (12)
teak (12)
teen (12)

Sound b
ban (14)
back (15)
bat (14)
bee (8)
bean (14)
beak (14)
beet (14)
cab (15)
tab (14)

Sound -u-
buck (12)
bun (12)
but (12)
cub (12)
cut (14)
none (12)
nub (12)
nut (12)
ton (12)
tub (12)
tuck (14)

Sound ch
batch (15)
beach (14)
catch (16)
chat (15)
cheek (12)
cheat (12)
chuck (13)
each (8)
teach (12)
touch (14)

Sound m
am (6)
beam (14)
bum (12)
chum (12)
come (12)
man (13)
mat (13)
match (14)
me (6)
mean (6)
meat (12)
meek (14)
much (12)
muck (12)
numb (11)
tam (13)
team (12)

Sound -i-
bib (16)
bin (14)
bit (14)
chick (15)
chin (13)
chit (13)
in (6)
it (6)
itch (7)
kick (16)
kin (14)
knit (12)
mit (12)
nib (14)
nick (14)
nitch (13)
tick (13)
tin (12)

Sound g
bag (14)
big (15)
bug (11)
chug (13)
gag (14)
gig (14)
gum (11)
gun (11)
gut (12)
mug (11)
nag (14)
tag (14)
tug (12)

Sound th[1]
bath (15)
teeth (12)
thatch (16)
theme (12)
thick (13)
thin (12)
thug (12)

Sound -aw
balk (16)
bog (15)
bought (15)
caught (15)
caw (8)
chalk (16)
cog (15)
gnaw (6)
gone (13)
moth (13)
naught (13)
on (6)
ought (7)
talk (15)
thaw (8)
thought (15)

Sound h
hack (13)
hag (12)
ham (11)
hat (12)
hatch (13)
hawk (15)
he (5)
heat (10)
heath (8)
him (11)
hit (11)
hitch (12)
hog (14)
hub (9)
hug (10)
hum (9)
hut (10)
hutch (11)

Sound d
had (12)
heed (12)
hid (13)
kid (15)
mad (13)
mud (11)
need (13)
thud (12)
add (7)
bad (14)
bead (15)
bid (16)
bud (11)
cad (15)
cud (13)
dab (14)
dad (14)
dam (13)
dawn (13)
dean (13)
deed (13)
deem (13)
did (16)
dig (15)
dim (14)
ditch (15)
done (11)
dog (14)
dug (12)
dumb (11)

Sound -e-
bed (12)
beg (12)
bet (13)
check (12)
dead (12)
death (13)
debt (13)
deck (12)
den (12)
ebb (6)
egg (6)
head (10)
get (13)
hem (10)
hen (10)
keg (12)
men (12)
met (13)
neck (12)
net (13)
ten (13)

Sound s
bass (15)
boss (16)
bus (12)
chess (13)
gas (15)
geese (12)
guess (13)
hiss (12)
kiss (14)
mass (14)
mess (13)
miss (13)
moss (5)
muss (12)
niece (12)
sack (16)
sad (15)
sag (15)
said (13)
sat (15)
sauce (16)
saw (8)
sea (6)
seam (12)
seat (12)
see (6)
seed (13)
seek (14)
seen (12)
set (14)
sick (14)
sin (13)
sit (13)
sought (15)
such (14)
suck (14)
sum (12)
sun (12)
toss (15)
us (7)

Sound v
eave (7)
dove (12)
have (12)
heave (13)
mauve (12)
of (6)
salve (15)
sieve (15)
thieve (14)
van (14)
vat (14)
vim (14)

Sound a(r)
bob (14)
bomb (11)
chock (13)
cob (13)
cock (12)
cot (13)

MAP Word List (Cont'd)

dock (12)
dot (13)
god (11)
got (12)
hock (11)
hod (11)
hot (12)
knob (12)
knock (11)
ma (4)
mob (11)
mock (10)
mom (8)
nod (11)
not (12)
notch (12)
odd (6)
psalm (12)
sob (15)
sock (14)
sod (14)
tock (13)
tot (14)

Sound w
one (10)
wad (14)
wag (14)
walk (14)
watch (15)
watt (14)
we (6)
weak (14)
wean (12)
weave (14)
web (12)
wed (12)
weed (13)
wen (12)
wet (13)
wick (13)
win (12)
wit (12)

Sound ng
bang (14)
bong (13)
bung (11)
gang (14)
gong (12)
hung (10)
king (13)
thing (12)
thong (13)
tong (13)
tongue (13)
sang (14)
sing (13)
song (14)
wing (12)

Sound o͝o
book (13)
cook (14)
hood (10)
hook (11)
nook (13)
soot (14)
took (14)
wood (12)

Sound p
bop (13)
cap (15)
chap (15)
cheap (13)
chip (14)
chop (13)
cop (12)
cup (12)
deep (14)
dip (15)
gap (14)
heap (12)
hop (11)
keep (15)
map (13)
mop (10)
nap (14)
nip (13)
pa (6)
pack (15)
pad (14)
palm (10)
pan (14)
pang (14)
pass (15)
pat (14)
patch (15)
path (15)
paw (7)
pawn (14)
pea (7)
peace (13)
peach (13)
peat (13)
peck (13)
peg (13)
peek (15)
peep (14)
pen (13)
pep (14)
pet (14)
peeve (15)
pick (14)
pig (14)
pin (14)
ping (13)
pip (14)
pit (13)
pitch (14)
pith (13)
pod (12)
pop (12)
pot (13)
pub (10)
puck (11)
pug (11)
pun (10)
pup (10)
pus (14)
puss (12)
put (14)
putt (11)
sap (15)
seep (14)
sip (14)
sop (14)
tap (14)
tip (13)
top (13)
up (5)

Sound sh
ash (8)
bash (15)
bush (13)
cash (16)
dash (15)
dish (15)
gash (15)
gush (12)
gnash (15)
hash (13)
hush (10)
mash (14)
mesh (13)
mush (11)
push (13)
sash (16)
shack (16)
shad (15)
shag (15)
sham (13)
she (7)
sheath (14)
shed (13)
sheen (13)
sheep (13)
sheet (14)
sheik (13)
shin (13)
ship (14)
shock (13)
shod (13)
shook (14)
shop (13)
shot (14)
should (13)
shove (11)
shuck (13)
shun (11)
shut (12)
wash (13)
wish (13)

Sound ur
bird (6)
birth (8)
burn (6)
burr (3)
churn (7)
church (8)
curb (6)
curd (6)
cur (3)
curse (8)
curt (7)
curve (7)
dirk (6)
dirt (7)
earn (3)
earth (5)
erg (2)
gird (5)
girth (7)
hearse (9)
her (4)
herb (3)
herd (7)
hurt (8)
irk (3)
mirk (6)
mirth (8)
myrrh (3)
nerve (7)
nurse (8)
perch (7)
perk (6)
pert (7)
purr (3)
purse (8)
search (9)
sir (5)
shirk (8)
shirr (5)
shirt (9)
third (7)
term (7)
terse (9)
Turk (7)
turn (7)
verb (7)
verse (9)
verve (8)
were (3)
word (6)
work (6)
worm (8)
worse (8)

Sound f
beef (15)
buff (11)
calf (15)
chaff (15)
chef (12)
chief (13)
cough (15)
cuff (13)
deaf (12)
fad (14)
fan (14)
fang (14)
fat (14)
fawn (13)
fed (12)
fee (7)
feed (14)
feet (14)
fern (11)
fib (14)
fig (13)
fin (13)
firm (8)
fish (13)
fit (13)
fob (13)
fog (14)
foot (13)
fought (13)
fur (5)
gaff (14)
half (12)
hoof (10)
huff (10)
if (6)
muff (11)
off (7)
puff (11)
sheaf (14)

MAP Word List (Cont'd)

surf (9)
thief (13)
tough (12)
turf (8)

Sound o'o
boon (12)
boom (11)
boot (13)
booth (12)
coon (12)
coop (12)
do (4)
doom (9)
douche (11)
food (13)
goose (12)
hoot (11)
moo (3)
mood (12)
moon (11)
moot (12)
moose (12)
noon (12)
noose (13)
pooch (13)
poop (12)
shoe (7)
shoot (14)
soon (13)
soup (13)
tomb (12)
too (7)
toot (14)
tooth (13)
who (4)
woo (4)
womb (10)

Sound th²
teethe (13)
than (15)
that (15)
the (6)
them (13)
then (13)
these (7)
this (14)
thus (13)
seethe (14)
soothe (13)
with (13)

Sound i-e
bide (14)
bike (16)
bite (14)
by (8)
chide (13)
chime (12)
chive (14)
dice (13)
dike (14)
dime (13)
dine (13)
dive (14)
dye (7)
fife (14)
fight (13)
fine (13)
five (13)
guide (14)
guy (7)
height (11)
hide (12)
high (5)
hive (12)
ice (6)
kite (14)
knife (13)
mice (12)
might (12)
Mike (14)
mine (12)
my (6)
nice (12)
nigh (6)
night (12)
nine (12)
pie (7)
pike (15)
pine (13)
pipe (14)
scythe (12)
shine (12)
shy (6)
side (14)
sigh (6)
sight (13)
sign (12)
tide (13)
tie (6)
tight (12)
tike (14)
tine (12)
thigh (6)
thine (12)
thy (6)
type (13)
tithe (12)
vice (13)
vie (7)
vine (13)
wide (13)
wife (12)
wine (12)
wipe (12)

Sound j
badge (14)
budge (11)
dirge (6)
dodge (11)
edge (4)
fudge (12)
gem (10)
germ (7)
gin (13)
hedge (8)
jab (14)
jag (14)
jam (13)
jaw (7)
jeep (14)
jerk (6)
jet (11)
jib (15)
jibe (14)
jig (14)
jive (14)
jog (10)
josh (12)
jot (12)
job (12)
judge (12)
jug (12)
jut (12)
merge (7)
nudge (11)
purge (6)
sedge (11)
siege (13)
surge (8)
urge (3)
verge (7)
wedge (10)

Sound a-e
ace (8)
ache (9)
age (8)
aid (7)
aim (7)
ape (7)
ate (7)
babe (16)
bait (15)
bake (17)
base (16)
bathe (16)
bay (8)
cake (17)
came (16)
cane (15)
cape (16)
case (17)
cave (16)
chafe (15)
chain (15)
chase (16)
dame (14)
date (14)
day (7)
eight (7)
face (15)
fade (14)
fake (16)
fame (14)
fate (14)
gain (14)
gait (14)
game (14)
gape (14)
gave (14)
gay (7)
gauge (15)
hate (12)
hay (5)
jade (15)
jay (8)
knave (14)
maid (14)
maim (14)
main (14)
make (16)
mate (14)
may (7)
nay (7)
pace (15)
page (15)
paid (14)
pane (14)
pave (14)
pay (7)
safe (15)
sage (16)
sake (17)
same (15)
save (15)
say (8)
seine (15)
shade (15)
shake (17)
shame (15)
shape (15)
shave (15)
shay (8)
take (16)
tame (14)
tape (14)
they (8)
vague (14)
vain (14)
vase (15)
wade (14)
waif (14)
wake (16)
wane (14)
wave (14)
weight (14)

Sound wh
whack (15)
wham (13)
what (10)
wheat (12)
whee (6)
when (12)
whet (12)
whey (7)
which (12)
whiff (11)
whim (11)
whine (11)
whip (12)
whirr (3)
white (11)
why (5)

Sound o-e
both (14)
beau (7)
boat (14)
bone (13)
choke (15)
coach (15)
coat (14)
code (14)
coke (14)
comb (12)
cone (13)
cope (13)
dome (12)
dope (13)
dote (14)
dough (7)
doze (13)
foam (12)
foe (7)
folk (14)
gnome (11)

MAP Word List (Cont'd)

goad (13)
goat (13)
yo (6)
hoe (5)
home (10)
hone (11)
hope (11)
hove (12)
joke (13)
know (6)
moan (11)
mode (12)
mope (11)
mote (12)
mow (5)
node (13)
oaf (7)
oak (7)
oat (7)
oath (7)
ode (7)
own (6)
phone (13)
poach (14)
poke (13)
pope (12)
sew (7)
shoat (14)
show (7)
shown (13)
soak (14)
soap (13)
though (7)
toad (14)
toe (7)
tome (12)
tone (13)
vogue (13)
vote (14)
whoa (5)
woe (6)
woke (13)
wove (13)

Sound z
booze (11)
buzz (11)
cause (15)
chaws (15)
cheese (13)
chose (14)
dies (15)
does (12)
doze (13)
faze (14)
fizz (14)
fuzz (12)
gauze (14)
gnaws (13)
has (12)
his (14)
is (8)
jazz (14)
maze (14)
nose (12)
ooze (5)
pays (14)
pose (12)
says (13)
sieze (13)
sighs (14)
tease (13)
these (14)
those (11)
was (11)
wise (14)
wheeze (13)
whiz (13)
whose (10)
zone (11)
zoo (6)

Sound ou
bough (7)
bout (14)
chow (8)
couch (15)
cow (7)
doubt (13)
douse (13)
down (11)
gouge (13)
gout (14)
gown (12)
house (12)
how (5)
mouse (11)
mouth (11)
mouthe (11)
mow (4)
noun (10)
now (5)
ouch (8)
out (7)
pouch (14)
pout (13)
shout (14)
souse (14)
south (14)
sow (7)
thou (7)
town (12)
vouch (14)
vow (6)

Sound l
aisle (7)
ale (7)
awl (6)
bail (15)
ball (14)
bawl (12)
bell (13)
bile (15)
bill (15)
bowl (12)
bull (12)
call (14)
chill (14)
churl (8)
coal (12)
cool (13)
cowl (12)
cull (12)
curl (7)
dale (14)
deal (14)
dell (13)
dial (14)
dill (15)
dole (12)
doll (11)
dull (11)
earl (4)
eel (7)
fail (14)
fall (13)
feel (14)
fell (13)
file (14)
fill (13)
foal (12)
fool (12)
foul (12)
full (12)
furl (8)
gal (14)
gale (14)
gall (13)
gill (14)
girl (6)
goal (11)
guile (14)
gull (11)
hail (12)
haul (13)
hill (12)
hole (9)
howl (10)
hull (9)
hurl (8)
ill (7)
jail (15)
jell (11)
jowl (11)
keel (14)
kill (14)
kneel (13)
knoll (11)
knurl (7)
lab (14)
lace (15)
lack (15)
lad (14)
lag (14)
laid (14)
lake (16)
lamb (13)
lame (14)
lone (14)
lap (14)
lash (15)
latch (15)
late (14)
lath (15)
lathe (15)
laugh (14)
law (6)
lawn (12)
lay (7)
lead (14)
leaf (14)
league (15)
leak (13)
lean (13)
leap (14)
learn (7)
lease (13)
leash (14)
leave (15)
led (13)
ledge (11)
lee (7)
leech (13)
leer (13)
leg (13)
leige (14)
less (14)
let (14)
lice (13)
lick (14)
lid (15)
lie (7)
lied (13)
life (14)
light (14)
like (15)
limb (13)
lime (13)
line (13)
lit (13)
lithe (13)
live (14) (i-e)
live (15)
load (13)
loaf (12)
loam (10)
loan (11)
lobe (12)
lock (14)
lodge (o-e) (11)
lodge (12)
log (13)
long (14)
look (13)
loom (10)
loon (11)
loop (11)
loose (10)
loot (12)
lope (11)
lose (11)
loss (15)
lot (13)
loud (11)
louse (12)
lout (12)
love (10)
low (5)
luck (12)
lug (11)
lung (10)
lurch (8)
lurk (7)
lush (11)
mail (14)
maul (13)
meal (13)
mile (13)
mill (13)
mole (10)
mull (10)
nail (14)
Nell (13)
nil (13)
null (10)
owl (5)
pail (14)
pal (14)

MAP Word List (Cont'd)

pawl (13)
pearl (7)
pile (14)
pill (14)
pale (11)
pool (13)
pull (13)
sale (15)
seal (14)
sell (14)
sill (14)
shale (15)
shall (15)
shawl (14)
shell (14)
shill (14)
shoal (12)
shove (12)
sole (12)
tale (14)
tall (13)
teal (13)
tell (14)
tile (13)
till (13)
toll (12)
tool (13)
veal (15)
veil (14)
vile (14)
wail (14)
wall (12)
weal (13)
well (13)
whale (14)
wheel (13)
while (12)
whirl (7)
wile (13)
will (13)
wool (12)
zeal (14)

Sound oi
boil (13)
boy (7)
choice (13)
coil (14)
coin (14)
coy (8)
foil (12)
join (13)
joy (6)
noise (13)
oil (6)
poise (14)
soil (13)
soy (7)
toil (13)
toy (7)
voice (14)
void (13)

Sound y
yacht (12)
yak (14)
yam (13)
yawl (13)
yawn (12)
yaws (13)
yea (5)
yearn (10)
yell (12)
yen (11)
yes (12)
yet (12)
yolk (12)
young (10)

Sound u-e
deuce (14)
dude (14)
duke (14)
due (7)
duel (13)
dues (12)
dune (13)
dupe (13)
feud (13)
few (6)
fuel (12)
fugue (13)
fume (13)
fuse (11)
hewn (10)
hue (4)
huge (11)
Jew (6)
juice (13)
June (12)
jute (13)
lewd (13)
lieu (6)
lube (13)
lute (13)
mule (13)
muse (12)
mute (14)
new (6)
pew (6)
puce (13)
sue (7)
suit (14)
tube (13)
tune (13)
use (6)
view (6)
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Applications

The primary use of this sequential vocabulary is for the development of discrimination skills in the child with a hearing loss. Since the words are presented in a systematic order of increasing difficulty, it is felt that most children will benefit by starting at the beginning of the list and working through to the final section. In some cases, the clinician may wish to initiate his program at some intermediate point below which the child can discriminate adequately. The level of discrimination ability can be determined by having the child repeat representative words in each section of the list.

The MAP word list can serve as a diagnostic tool to describe the child's ability to discriminate the phonetic elements in word combination. Although the list contains about 1200 items, it can be given in a series of tests using a conventional live-voice procedure for testing speech intelligibility.

The list can also be applied to the phonic training of students who have reading problems since both speech and hearing are critical in the reading process. If such a systematic approach is used with these problems of reading disability, much of the confusion growing from current phonic training methods may be eliminated.

Summary

The Maximum Auditory Perception word list (MAP) consists of monosyllabic words containing the various English phonetic elements permuted and combined with each other in a sequential order. The sequence of sounds is based upon their discriminability from each other, their time of development, and their frequency of occurrence. The MAP word list has application in auditory training, diagnosis of discrimination ability, and remedial reading.

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Definition of cluttering: *A torrent of half-articulated words, running after one another like peas in a spout.* (From John Wyllie, *The Disorders of Speech.* Edinburgh: Oliver and Boyd, 1894.)

Psychotherapeutic Tools for Parents

• *Edward E. Matis*

When clinical speech services were conceived chiefly in terms of teaching a child to talk by drill on speech, parents needed to function chiefly to give extra drill and police the child's speaking activities. Now clinical speech services are viewed chiefly as a process of helping the client to remove barriers to growth. These barriers are conceived as emotional blockages which have their inception and are perpetuated in an interpersonal environment; the blockages are removed not by intellectual processes of reading about or being told through lectures but by the emotional impact of 'living through' some growth experiences. The function of parents becomes one of collaborating with the speech clinician in searching out the specific barriers to the child's growth, searching out barriers in themselves which prevent them from creating an environment that has growth potential, and then modifying aspects of the environment so that both they and the children can move ahead.

The possibilities in this newer conception of therapy are charted in Figure 1: (a) In remedial programs which consist only of relationships between the speech clinician and children, the clinician can observe each child's behavior in relation to himself and he can create a relationship aimed at reducing barriers in the child within the framework of that situation. (b) In remedial programs which consist only of relationships between the speech clinician and parents, the clinician can get reports of each child's behavior and can observe the parent's behavior in relation to the clinician and other parents. He can create a relationship aimed at reducing barriers in the parent within the framework of that situation. (c) In the remedial programs which consist of relationships between the speech clinician and the children, the speech clinician and the parents, the children and the parents, there is not only the double effect of the clinician's relationships with both parent and children's groups as mentioned for each separately; there is also the opportunity to show parents by actual demonstration with the child the use of such psychotherapeutic tools as showing permissiveness, setting and adhering to limits, accepting and handling feelings, setting realistic standards, etc. With both the parent and the child receiving some help in the clinic, the probability of modification of the environment outside the clinic is greatly increased. This assumption is supported by evidence from clinical experience with this type of therapy.

This report has a threefold function: (a) to report that parent counseling can be done in a clinical center con-

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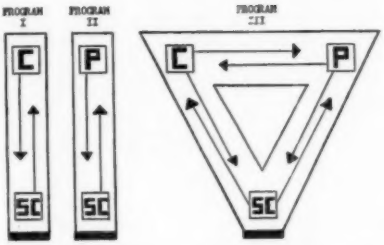

FIGURE 1. Diagram of speech services. SC = speech clinician; C = children; P = parents. Program I is restricted to relationships between the clinician and the children. Program II is restricted to relationships between the clinician and the parents. Program III consists of relationships between the clinician and the children, the clinician and the parents, the children and the parents.

sisting of but one speech clinician, (b) to indicate that the psychotherapeutic tools used in group therapy are applicable to parent groups, (c) to suggest by examples how parent counseling as a part of speech training can help to reduce barriers to growth in children.

It has been widely assumed that parent counseling as a regular part of a program of therapy can be done only in a college clinic where a number of clinicians are working on one program. This report, however, is based on a program carried out by one clinician. The Florence Speech and Hearing Center is located in an industrial-agricultural area of northern Alabama serving two counties with an urban-rural population of 100,000 people. The center was established through the cooperative efforts of interested groups and agencies in the communities and the college which served that area. The clinical program described below is now in use at the center, and it has been used continuously for the past eight years.

Children come to the center for speech training from city and county schools. Sessions for children from four to 12 years of age cover a four-week period with eight children in a group. The daily program covers a two-hour block involving one hour of individual and group work with the children and one hour of group counseling with the parents. While the clinician is with the parents' group, the children have a play period and experiences in social skills under the supervision of the secretary at the center, who was selected for her potential ability and who was trained by the clinician to help in this particular capacity.

PARENT COUNSELING

The process of therapy with parents rests on the same principles as therapy generally. Each individual must do his own learning; consequently, the role of the clinician is to create an environment in which each individual can do that learning most effectively. Backus (*1*) has characterized such a role as having these aspects: (a) creating an atmosphere of security and belongingness, (b) reducing barriers, (c) making tools available, (d) facilitating observation, (e) providing repeated experiences. The sections which follow describe the ways in which this clinician has handled his role of creating an environment for learning for parents within the framework of the parents' group.

Creating an Atmosphere of Security and Belongingness. The desired atmosphere is created not only by the clinician's words but also, and especially, by his actual behavior in relation to the parents. As a starting

point, he can encourage each mother to tell something about her child and her feelings of concern about the problem. As they talk, the clinician reflects the feelings, showing acceptance of these feelings of frustration, helplessness, or worry. He does not evaluate or try to change the feelings. Each person is accepted as he is at the time. Feelings of security develop from the parents' experience of engaging in a cooperative effort to explore behavior.

This clinician mentions some of the problems encountered with his own children as a way of suggesting to the parents that problems are not peculiar to them alone. In addition to regular group discussions, two devices are used to promote participation. (a) The large group is divided into two smaller groups to work for 10 or 15 minutes. (b) Role playing is used, that is, two or three persons re-enact a particular situation under consideration. This helps change the discussion from a merely intellectual level to a real feeling level.

Reducing Barriers. Parents' feelings of inferiority, guilt, generalized anxiousness, and resentment constitute the usual barriers. The clinician's initial statement that parents are not considered to be to blame because their children have problems helps temporarily to alleviate feelings of guilt and inferiority. Then the daily acceptance of feelings experienced gradually helps to reduce such feelings. There are, also, several other ways in which these barriers can be reduced in parents.

Within the structure of the group the clinician raises the problem of barriers in a general way through bringing it into a discussion which originates out of a specific problem raised by a parent. Attempts are made at describing the effects of feelings of guilt or inferiority as they apply to a particular child's behavior in a situation familiar to the parents. A direct approach to barriers can be made also by using in the parents' group a situation in which feelings of guilt or inferiority can be demonstrated. Since many parents want to see the clinician as an 'authority who can give them magic-formula answers,' their feelings of inferiority can be observed in their behavior toward the clinician or toward other parents.

For some parents such an approach to barriers may be too threatening to handle within the group. For these parents, conferences can be arranged to give them individual help in handling their feelings in the group.

The process of reducing barriers in the parents' groups begins initially with the clinician helping parents to recognize their feelings of guilt and inferiority as part of their behavior in specific situations. Gradually, as they experience acceptance and support not only by the clinician but also by the group, they go on to explore more generalized feelings of anxiousness and resentment and report that as these feelings are alleviated they are better able to help their children handle feelings.

Making Tools Available. If parents are to be helped to change behavior in themselves and in their children, tools need to be made available to them. Tools found to be most useful to parents are (a) using a 'situational' rather than a 'trait' approach to study-

ing behavior and (b) using the principles of general semantics.

Most parents in this culture have been taught that much of human behavior is caused by fixed traits like stubbornness and shyness. Such an assumption does not suggest possibilities for changing behavior. Parents need to explore the notions (a) that behavior is rooted in a concrete situation, (b) that how a person sees the situation and his feelings in that situation are factors in his behavior, and (c) that behavior can be changed through studying behavior as a part of a specific situation. They come to see that these assumptions serve as tools in that they suggest ways of reacting differently in specific situations.

Through observing the clinician work with the children, discussions about behavior in the parents' class become meaningful as the parents can watch the clinician using permissiveness, setting limits, and handling feelings, and then see how the behavior of the children changes as a consequence of such treatment.

The principles of general semantics are viewed as tools for observing and charting behavior. Among these tools are (a) delaying judgment, (b) looking for differences as well as similarities, and (c) using a many-point scale instead of a two-point either/or scale for describing and evaluating behavior. In so doing, the parents observe, for instance, signs of anxiety instead of only the signs of meanness observed before. A many-point scale is used to chart changes in behavior so that parents learn to evaluate behavior on a continuum rather than dichotomizing behavior as either 'good' or 'bad.' The awareness of even small changes in behavior increases a parent's feeling of success and helps to avoid the old feelings of frustration and despair.

Facilitating Observation. Parent observation is directed not only to speech behavior but more specifically to other aspects of a child's behavior. Discussions about behavior are carried on in the parents' group, and active observation of behavior is carried out through the parents watching the clinician's daily work with the children. Parents are given specific points of behavior to observe, and these daily observations are recorded by each parent in a special notebook. Such directed observations include noting differences between two specific children's behavior in relation to the clinician, noting what the clinician says when he helps a child express his feelings, noting how children are held for limits, etc. Oral and written descriptions of situations occurring at home are also useful in helping parents observe more details of behavior. Experience has shown that as a given session goes on, parents bring in more about what the child actually does and less of their own evaluation. As they see a given situation more descriptively, they report that they handle it with less emotional response.

Providing Repeated Experiences. In a therapy program which makes use of parent groups, the parents can get continuous help rather than advice once a week through a scheduled conference with the clinician. The parents learn from actual doing within the parents' group and at home. Parents can be shown how to change behavior through observing the children's group, discussion in the parents' group, and role-

playing situations. Receiving day-to-day help in the clinical situation while they are creating changes in their children's behavior at home can provide parents with the emotional impact of 'living through' growth experiences. It also provides them with the much needed support in their initial attempts to try new ways of solving old problems.

Examples from Parent Groups

Experience with parent groups indicates that there are several critical areas in which parents need help in relation to their children: (a) setting realistic standards, (b) setting and adhering to limits, (c) accepting and handling feelings. This part of the report will describe how parent groups helped particular parents to reduce barriers to their children's growth.

Setting Realistic Standards. Carol's mother was an attractive young woman who prided herself on her efficiency as a skilled housewife who ran her house according to a rigid schedule. She made all of her own and Carol's clothes. She derived great pleasure from compliments on her excellence as a housewife.

In the parents' group the mother reported that she was concerned about Carol's dependence on her, in that Carol wanted her mother to make choices for her, she was shy, she was scared easily, and she had to be dressed completely. The mother observed that Carol showed a great deal less dependence in the children's group than she did at home. In discussing the problem in the parents' group, Carol's mother was helped to see that she was expecting her daughter to handle responsibility on an adult level to fit into the rigid household schedule.

Since Carol's dressing in the morning was a difficult situation, it was role played in the parents' group. Carol's mother was encouraged to handle the dressing situation by selecting two dresses for Carol to choose from rather than expecting Carol to choose from a dozen dresses. With continued help in the parents' group, the mother went on to allow Carol to choose her socks, shoes, etc. As Carol handled dressing by herself, the mother allowed her to choose when she wanted to play with her toys, and she found it easier to allow Carol to bring children into the house to play without getting upset because they did not return each toy to its respective place.

In the final therapy session a year later, the mother reported in the parents' group that Carol, by her own request, was taking dancing lessons. Carol was choosing all her own clothes and dressing herself in time for school. She was playing with more children in the neighborhood without being scared. Friends of the family characterized the changes in her behavior by saying, 'Carol is stepping out on her own as a person.'

Setting and Adhering to Limits. In the parents' group, Bobby's mother reported that Bobby had to have his own way at home or he had temper tantrums. She felt that she couldn't exert any control over Bobby because she had to give in to him.

In observing the children's group, she could see that Bobby was not demanding his own way to the degree that he did at home. Discussion in the parents' group revealed that Bobby's mother felt inadequate in her role as a

parent since her mother, her husband, and her friends were continually giving her advice about what was best for Bobby.

In further discussions the mother indicated that her childhood was one characterized by very rigid limits. With the help of the group she began to see that discipline was necessary for children and that Bobby need not have unhappy childhood experiences similar to her own.

The mother stated that her husband tried to enforce rigid discipline with Bobby. In the parents' group she was shown that Bobby's rebellious behavior at home was related to his feeling insecure in situations where on the one hand his father demanded rigid discipline and on the other hand his mother was afraid to enforce discipline. Through watching the clinician help Bobby handle limits within the children's group and through acting out situations in the parents' group, the mother was encouraged to try placing limits on Bobby's behavior at home.

With her husband allowing her to take the lead, she began by allowing Bobby the choice between playing with his toys in his bedroom or in the playroom rather than all over the house. She accepted the choices Bobby made and with further help moved ahead to placing limits on Bobby's going to bed, eating candy between meals, and playing with other children. As Bobby handled narrow limits and restricted choices in an area, the mother used less rigid limits and allowed him more choices in that area.

At the end of the training period, Bobby's mother had assumed full responsibility for discipline with him, and she was not throwing up her hands in despair when his behavior became difficult to handle. A year later, she stated that she felt equal to her role as a parent, and both she and Bobby felt more secure in their relationship. Bobby's temper tantrums were markedly decreased, and the mother's friends were not referring to Bobby as a 'problem child.'

Accepting and Handling Feelings. In the parents' group Ray's mother reported that he bullied his younger brother at home, defied his mother, and in many instances had to be whipped before he would submit to parental directives.

In group discussion about the ways in which the parents were reared, Ray's mother stated that she was handling him in the same way she had been handled as a child. With further exploration by the group she discovered that she resented her strict bringing up, and yet she was using similar 'iron-handed' methods with Ray.

In role playing a situation which had occurred between her and Ray and through questioning by other group members, the mother was shown that in difficult situations she was feeling threatened by Ray's behavior and getting angry at herself for not controlling the situation. She took out her feelings on Ray by whipping him.

In role playing situations which involved the mother, Ray, and the younger brother, the mother was shown that Ray was interpreting her behavior toward him as rejection since she did not whip or show anger toward his brother. She stated that she handled difficult situations between her sons by whipping Ray.

The mother was encouraged to express her feelings of anger with Ray through observing Ray accept feelings of anger expressed by the clinician in the children's group. Within the parents' group the mother was helped to find areas where she could help Ray express his feelings and these situations were role played before she tried them. She began at home by telling Ray, and the younger brother if he were a part of the situation, when she was getting angry. As she found it easier to handle her own feelings, she encouraged Ray to express his. Later she moved into direct reflection of Ray's feelings of not being liked, not being wanted, not being loved, etc. With additional assistance in the group, the mother, by reflecting his attitude rather than whipping him, helped Ray express feelings of hostility toward his younger brother.

When Ray returned for his final therapy session a year later, the mother reported that she did not have to resort to whipping Ray and that Ray was not bullying his younger brother. Ray did not show signs of tension as he did a year before when he had difficulty in writing his name and in handling and manipulating objects.

Summary

This report suggests that (a) parent counseling can be done in a clinical center consisting of but one clinician, (b) the psychotherapeutic tools used in group therapy are applicable to parent groups, and (c) parent counseling as a part of speech services helps to reduce barriers to growth in children.

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CLINICAL FORUM

• What Is Medial Position?

In articulation testing it has become widespread practice to provide the testee with words which include phonemes in the 'medial' position. Numerous examples in the literature on articulation testing give evidence of this practice. Yet when one examines the concept which 'medial' represents, he may fail to get any clear picture of what it means. Rather, he may justly conclude that it means a great many things.

If a student today were to look up a list of words which have been used to represent, for example, medial /d/, he might very well find among them: *candy*, *today*, *admire*, *woodpecker*, *foundry*, and *garden*. However, within its syllable, each one of these /d/s differs from the others in phonetic context, in syllabic stress, or in syllabic position. In *candy*, the /d/ is the initial phoneme on an unaccented syllable. In *today*, it is the initial phoneme of an accented syllable. It is the terminating sound of an unaccented syllable in *admire*, and the terminating sound of an accented syllable in *woodpecker*. In *foundry* the /d/ is a component of a blend which initiates an unaccented syllable. Finally, in the most common pronunciation of *garden*, the /d/ is an inextricable part of the syllable gestalt and might be best transcribed as [$\frac{d}{n}$], a notation scheme suggested by Curtis and Hardy (*J. Speech Hearing Res.*, 3, 1959, 244-257). It is not necessary to choose the /d/ phoneme to find a rich variety of 'medial' positions. Almost any phoneme would do.

An operational definition of 'medial position' seems to be suggested by the foregoing paragraph: a phoneme is in a medial position in a word when it is neither the first nor the last sound in that word. When we have observed what a variety of phonetic events can occur between the ends of a word—especially a long word—are we justified in continuing to use one adjective to describe them all?

Van Riper and Irwin (*Voice and Articulation*, chap. 3) strongly advise that the tester should consider the variability of various productions. A considerable body of experimental evidence indicates that the production of consonants does vary a great deal from word to word as used by individual speakers. Moreover, the present writer recently encountered a woman whose pattern of articulation vividly dramatized how the production of two consonants might vary. It had been recorded at the initial examination that /k/ and /g/ were misarticulated in the initial position but were correctly produced in the medial and final positions. During the course of the clinical sessions which followed, it became evident that these sounds were correctly produced in some but not all instances where they occurred medially. The

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original estimate of the patient's initial and final position abilities did not change, however. More thorough testing turned up the following lists of 'hard' and 'easy' words for her, all with 'medial' /k/ or /g/.

Hard	*Easy*
re*cord* (v.)	*re*cord (n.)
ago	agony
reconnaissance	reckon
begun	big'un (big one)
in*crease* (v.)	*in*crease (n.)
a gate	agate
a corn	acorn
become	beckon
again	wagon

When these lists had been compiled, the pattern of difficulty became clear. By abandoning the concept of 'medial' entirely and by regarding the troublesome sounds as initial or final elements of syllables, both the clinician and the patient were able to understand what had previously seemed a nebulous, ill-defined problem. According to the patient's subjective report, in the easy words she was able to produce the /g/ or /k/ as the final phoneme of the accented syllable. This was impossible in the hard words. When articulating 're*cord*, ago,' etc., the /g/ or /k/ had to be produced as an initial consonant, and this was where she found trouble. When this understanding was reached, the patient proceeded to improve at an increased rate. At this writing, her prognosis is more favorable than it has been for the past several months. It seems likely that more time could have been saved in the beginning if this detailed analysis had been undertaken during the first or second clinical session and if the writer had at that time been able to dismiss the inadequate 'initial, medial, final' framework.

Vagueness has always been a serious encumbrance to clear thought and certain action. Several specific reasons can be brought out for avoiding the vague term 'medial.' First, as it is now used, 'medial' is so ambiguous as to have no value in the compilation of research data. Scientific progress is painstaking by nature, and any compromise with the most exact description possible inevitably reduces an experiment to the realm of pseudo science. The same argument fits clinical practice as well: meaningful diagnosis and recommendations depend upon minutely precise descriptions. Lacking such precision, knowledge is replaced by hunches. Re-evaluations to judge a patient's progress are common practice. Yet re-evaluations cannot be of maximum value unless the original description is exact. This is especially pertinent when a patient acquires a new clinician. Records which are transferred should be unquestionably intelligible from one clinician to another. But if medial /d/ is represented by *candy* in one person's test, by *woodpecker* in another, and by *garden* in still a third, how can progress be judged?

It appears that the sensible course would be to follow the lead of R. H. Stetson (*Motor Phonetics*, chap. 1) and those who have compiled experimental evidence in support of his views. He showed that the syllable should be considered the basic phonetic unit. The core of every syllable is a vowel or vocalic sound, and consonants function only within their syllables. They initiate or they arrest vocalic sounds. Thus, the /k/ in *because* is just as much an initial sound as the /k/ in *cause* or in *of course*.

Clinicians must be enabled to com-

municate what they mean when they report that errors were made on internal consonants. One way would be for all of us to adopt the same standardized test. At present, this seems to be an ideal not likely to be reached in the near future. Many attempts have been made to produce such a test; but so far, none of the attempts have been universally accepted. In the meantime we, who are supposed to be semantically sophisticated, should face up to this semantic error of our own making. Further, we must realize that we compound the error with every inexact articulation test we record.

This solution is submitted: discard the 'initial, medial, final' framework and reclassify consonants with more precision. The reclassification should be based, first, upon the consonant's relationship to its syllable. Consonants (whether singles or blends) which initiate a syllable must precede a vowel. These consonants, then, are prevocalic, and may be designated by the symbols CV. Consonants which arrest or terminate a syllable must follow a vowel. These are postvocalic, and may be designated by the symbols VC. All consonants which begin and end words or phrases are external consonants and may be classified as either prevocalic or postvocalic. Internal consonants (whether singles or blends) are those spoken within words or phrases. They may be divided into three kinds: prevocalic, postvocalic, and intervocalic. This last designation is explained below. The division of consonants into external and internal classifications recognizes the importance of the syllable's position within the word or phrase in which it is spoken. Some examples of these different internal consonants should be helpful.

Sounds	External		Internal			Remarks
	1	2	3	4	5	
	CV	VC	CV	VC	VCV	
m						
b						
p						
w						
etc.						
sm						
br						
bl						
etc.						

FIGURE 1. A suggested chart scheme for phonetic analysis, based on syllabic position of consonants. *CV* = external prevocalic; *VC* = external postvocalic; CV = internal prevocalic; VC = internal postvocalic; VCV = intervocalic.

The /b/ in *football* or the /k/ in *popcorn*, since they initiate the syllables in which they function, are examples of prevocalic, single consonants. A prevocalic consonant blend is illustrated by the /pl/ in *airplane*. The /θ/ in *bathtub* and the /z/ in *newspaper* illustrate the postvocalic single consonant. A postvocalic consonant blend can be found in the /ks/ in *axe handle* or in the /lt/ in *felt hat*. The term 'intervocalic' includes all those consonants which cannot be unequivocably placed with either the preceding or the following vowel. Examples of intervocalic singles are found in the /m/ in *camel* or the /p/ in *supper*. Intervocalic blends are evident in the /ksp/ sequence in *experiment* or the /skr/ sequence in *describe*, and the reader can easily demonstrate for himself that these words can be divided in more than one way.

Using this more meaningful classification of consonants, an individual's pattern of articulation might be quickly

and more accurately set down on a mimeographed form such as that shown in Figure 1. The blank spaces are used to record whether the phonemes heading each row were interpreted by the clinician as normal, altered, or omitted during the examination. When a form of this type is used, the clinician has a complete record of what phonemes were tested, what ones were not tested, and any special or general observations which at the time seemed to be significant. If the clinician wants a screening test, he may select particular consonants in particular syllabic positions. If he wants to examine more thoroughly, he may use the entire list. In either event, he will be able to report more precisely the real limits of his observations, improving both his experimental and his clinical effectiveness.

Summary. An argument has been presented in favor of abandoning the 'initial, medial, final' classification of consonants, and replacing it with a classification based upon the consonant's relationship to its syllable, and the syllable's position within the word or phrase in which it is spoken.

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• Return from Silence—A Personal Experience

My personal experience with symptoms of aphasia started on June 27, 1945. Available military records state that on that date I was admitted to an army hospital on Luzon, Philippine Islands, because of a 'concussion, cerebral, and contusion, involving the left temporoparietal area, manifested by general paresis.' An additional diagnostic section recorded 'Aphasia, and reflex changes, deformity of skull, moderate, temporal and parietal region, bilateral, following negative exploration for subdural hematoma.'

An unconscious period of about three weeks followed the traumatic experience. During this time a trephining operation was performed, and I was transferred to an army hospital on Leyte.

My earliest posttraumatic memory started when, one by one, beds with white sheets began to appear. These beds appeared from nearby, extending to what seemed like infinity. Soon thereafter the tent canopy became isolated from the beds. Later, moving forms began to appear in the beds. Nausea was intensified by odors of decaying flesh soon after movement was observed. It seemed as though this was the way things were supposed to be.

An awareness of events involving myself followed when someone approached the foot of my bed and scratched the bottoms of my feet. An intense sensation passed through my body. At other times someone shone a beam of light into my eyes. I heard bedside conversations accompanying these events. These were audible but without meaning, and did not interest me. Again these things seemed to happen because my world was thus.

Some time later, doctors, nurses, and orderlies—without titles—became recognizable by their functions. It seemed natural that each should care for me in the ways that he did. Members of the hospital staff, as well as other bed patients, told me about a jeep accident in which I had been injured.

Their efforts to communicate with me were met with silence. Speech communication appeared to be a function of the general populace. It had neither meaning nor function for me.

By some process of events recall of my activities in war—combat or battles—began to emerge. The specific part I played, as well as the location where I played it, remained vague. Nevertheless, I made plans to return immediately to the field without knowing where that might be. With increasing awareness of my hospitalization on the island of Leyte, I began to recall my active role in combat on the island of Luzon.

The growing awareness that I was not in combat aroused a consuming desire to stand on the ground and walk, to return to duty immediately. My feet lowered themselves to the ground. My legs bent double at the knees under the additional weight of my body, and I sprawled to the ground. I was surprised that I had a body with weight. My body was returned to the bed with the instruction that I must remain lying on my back.

Efforts to stand and walk were attempted for the next several nights after dark. Each attempt to stand ended as before. Various periods of time would pass before the orderlies found me on the ground. These attempted explorations ended when the orderlies restrained my body in bed by passing gauze underneath the bed and tying my wrists to each of the two ends. The restraint made it impossible to move about for the remainder of that night which seemed like eternity. I was angered and silently cursed the orderlies for this injustice. I struggled throughout the night with the gauze that was holding me down. When I was released soon after daylight, I became aware that the nurses and orderlies appeared different. This difference seemed to be represented by a tone of general good humor. I started to hum. When I attempted to talk with others, their facial expressions, as well as vocal tones, changed. Their responses seemed inappropriate. Intermittent comprehension became total comprehension. I understood what they said. They did not understand my speech and tried to comfort me.

Soon after the intensely frustrating night I was carried onto a hospital plane and started on my flight to the United States with a poor medical prognosis.

I was hospitalized on the Hawaiian Island of Oahu on the day that hostilities ceased in the Pacific theater of operations. The local cease-fire exuberance became for me combat reality. The staff was being roused to action against Japanese sympathizers reported to be attacking the hospital. My unintelligible request for a rifle for the purpose of turning back the attack went unheeded. This rejection of my combat skill, as well as the staff's lack of concern, precipitated feelings of incompetency leading to violent anger which had no communicative outlet.

Several afternoons of repeated attempts to communicate with a Red Cross volunteer lady resulted in gifts of a fountain pen, a cigarette lighter, a wrist watch, and an eye mask for me. At that time I had difficulty holding a cigarette, and weakness in my fingers prohibited the well-coordinated movements needed for igniting the lighter. Time in terms of hours, minutes, and seconds had no meaning for me. The mask was useful for covering my

eyes each afternoon during her visit. I was angry over what seemed like an intrusion into my private world; still, it seemed impossible to communicate my feelings.

I was flown to an army hospital in Virginia. My inability to walk or talk was unacceptable to me. Members of my family came to pity me without empathy. My personal feelings of worthlessness were met with comforting words rather than the rejection that I felt I rightly deserved. Shortly, visitors invaded my private world too often. It was impossible to communicate to them my feelings of worthlessness, as well as my irritation over being visited. My private cubicle seemed too small for my visitors and me. Physical escape was impossible. This situation angered me into attempted ambulation.

Once again it seemed important for me to walk. In the privacy of the cubicle I managed to stand upright on the floor. I hung onto the bed, aware of body weight and leg weakness. After being successful in standing erect, I then took some sample steps and remained on my feet. This success encouraged me to release my hold on the bed, and I slowly slid my feet along the floor until I found myself passing the nurse's desk in the corridor. The nurse looked up, saw me, and smiled beautifully. Her smile reinforced the thrilling sensation that accompanied my achievement.

The neuropsychiatrist told me one day after scratching the soles of my feet that the toes were supposed to turn downward. He scratched my feet again to show me how the toes on my left foot turned upward. From that time on a struggle went on within me to make my toes do the expected whenever my feet were scratched by the doctor. 'Questionable Babinski' is the last diagnostic label used to describe something that happens to my great toe when my left foot is scratched.

Speech therapy was begun soon after it was known that I could walk. A puzzling method was used. The volunteer lady, who was my first speech teacher, filled in the words of crossword puzzles after reading the definitions aloud.

I was transferred to another hospital with a speech clinic to receive speech training during the day and be absent from the post at night. Accuracy of sound movements and techniques designed to help a stutterer deal with feelings induced by social penalities were emphasized. Part of each day was allotted to group discussions. Other persons with symptoms of aphasia comprised the group. Within six months feelings of anxiety developed which I assumed were related with the speech clinic situation. My complied-with request for dismissal from the army hospital seemed to reduce the strength of these feelings.

Subsequent entrance in a University speech clinic showed the following behavior: Speech performance consisted of spaces of silence between syllables; my left leg dragged while walking; talking while walking was incompatible with simultaneous thought processes; my penmanship was legible if read in context.

In this speech clinic semantic discussions were especially helpful. These led to the first acceptance of my disabilities. In my behavior I recognized abilities as well as limitations. I audited a freshman sociology course; the professor encouraged my participation in

the class discussions. Tests were taken with the class, and my papers were graded. The professor advised me to enroll in a curriculum leading to a degree.

After eight months in the speech clinic, self-observation revealed speech consisting of spaces of silence between syllables as well as the same physiological symptoms previously reported. However, feelings about my purpose for living were different. It was my assumption at that time that my strong feelings of anxiety were related to the sheltered environment of the speech clinic. My abilities were rejected. I returned to my home town where pity, assumedly, could be experienced while interacting with familiar people. Here my disabilities, excused by others, reinforced my self-rejection.

Fluent penmanship became important to me. I enrolled in a business college for the explicit purpose of receiving penmanship training. Typing, business arithmetic, spelling, and junior accounting accompanied this training. At the end of six months it was possible for me to write with a relative degree of legibility and to type at the rate of 20 words per minute; my knowledge of spelling was refreshed, and the first course in junior accounting was completed to my instructor's satisfaction. Still, spaces of silence between each word persisted, and gait distortion was evident. Speech and/or motor functions were incompatible with simultaneous thought processes upon enrollment for a degree with a nearby university.

With the approach of commencement, three years later, it was observed that my rate of speech had increased; my script writing was more legible, and my gait approached normalcy when unhurried. However, it was apparent that my speech and other motor behaviors were inadequate for successful competition on the job market. One could assume that I needed further recovery time as well as more knowledge of professional tools. Actually, both needs were present. Feelings of rejection and the need for environmental pity were recognized by my graduate school advisors. Thus, while I learned professional tools, I was guided into psychotherapy. As a result of therapy, my needs for a halting gait, hesitant speech pattern, rejection, and pity were examined and replaced by gait and speech patterns more nearly those of the general populace.

Socially acceptable dynamics replaced my withdrawal from society. These were identified and traced to psychosomatic relationships. My perceptions of self became more closely identified with the more objective observations of my close associates.

In conclusion, my own experience leads me to propose that during initial therapy clinicians help patients examine their basic assumptions of self. As recognition of functioning distortions facilitate changes, the patient will make greater strides toward speech recovery. Therapy can then move into sessions using conventional procedures.

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• The Student of Stuttering as a Stutterer

Conscientious students of speech pathology sometimes underestimate the importance of personal experience in simulating stuttering as a means of better understanding of the nature, etiology, and treatment of stuttering. Some beginning speech clinicians are abashed at the prospect of stuttering deliberately. Even though intellectually they understand that a given stutterer's plight may stem in part from his efforts to avoid stuttering, they sympathize inwardly with his efforts to conceal stuttering manifestations.

What follows has been found to be of value to speech clinicians in training who need some extra leverage to attack their own inhibitions or to increase their own awareness of the importance of first-hand experience in psuedo stuttering.

Reasons for Simulating Stuttering:

a. Many present theories and therapies are based on evidence that the stutterer's speech mechanism is fundamentally no different from the nonstutterer, nor is it altered by stuttering. Although a speech clinician may have access to supportive data, he may not be able to transmit effectively his belief in the reliability and validity of this evidence to his client if he himself is reluctant or unable to demonstrate that he can stutter on demand without compunction.

b. Most stuttering treatment includes consideration of speaker-audience attitudes. Johnson, Darley, and Spriestersbach (*Diagnostic Manual in Speech Correction*, p. 201) point out that students of speech pathology read a good deal about the attitude of listeners toward defective speakers and the attitude of the defective speakers toward listeners, but the closest students come to getting 'inside their skins' is by talking to some stutterers about their experiences with listener reactions.

c. Most therapies encourage the secondary stutterer to enter feared speaking situations. Stuttering can be likened in some of its lesser manifestations to speech fright, a condition experienced by a reported 90 per cent of college freshmen. Students of speech pathology also may be assumed to be prone to speech fright. It is imperative that the student clinician should recognize and be able to do something about the possible hypocrisy arising from directing a stutterer into a speaking situation he himself is unwilling to enter.

d. Stutterers and their parents are encouraged to be tolerant of moments of nonfluency as well as stuttering. The student clinician should have an awareness of his own nonfluency and assess the reasons for his own possible intolerance against the reasonable as well as unreasonable demands of society for fluency.

Approaches to Pseudo Stuttering:

a. Practice stuttering privately in a variety of ways before trying it out on an audience. Use a tape recorder and a mirror. It isn't necessary to exaggerate symptoms as your purpose is not to parody or burlesque someone who stutters chronically.

b. Talk freely into a tape recorder which has been adjusted to provide delayed feedback. Don't try to 'beat' the machine. Allow the words to pile

up and allow them to repeat. Truly allow yourself to stutter artificially.

c. Use starters or fillers such as 'oh,' 'uh,' 'er,' 'that is,' and others, far exceeding your usual quota. Do this for several hours or for a whole day.

d. Deliberately insert several unusual pauses in casual conversation with a friend. No repetitions of forcings are necessary—just an unusual silence such as a pause of a second or two between words when you say, 'Good morning.'

e. Deliberately wait out a question before answering so that it has to be repeated.

f. A simple question concerning directions might constitute your first audience-directed attempt at stuttering. Stutter on only one or two words. A successful performance might include some personal embarrassment or anxiety.

g. Simulate stuttering in several situations where you encounter significant changes in attitude on the part of your audience: condescension, uneasiness, laughter, encouragement, a puzzled look, etc.

h. Talk in such a way that your listener supplies the stuttered word for you.

i. Place a telephone call that causes the person on the other end of the line to hang up.

j. Talk as a stutterer to your seat partner for the duration of train, plane, or bus ride—or do all your stuttering while shopping.

Other possibilities will suggest themselves through class lectures, reading, observations, and participation in clinical procedures.

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• A Therapeutic Oral Device for Lateral Emission

Among the speech problems of public school children, errors in articulation account for the majority and [s] misarticulations are the most frequent. This article presents a simple therapeutic device which expedites instruction with school children having laterally emitted [s] sounds. Its use offers motivation and quick success.

An acceptable [s] can be formed organically in many ways, but the one feature that remains constant is the 'narrow groove' along the midline of the tongue. Lateral emission of [s] appears to be caused by the absence of the medial groove. The position of the tongue may be (a) far forward with tip on the cutting edge of the upper teeth with slight protrusion, (b) tip flat against the alveolar ridge, (c) front blade flat against forward portion of palatal arch or not quite touching it, or (d) far to the rear with tip curled up and slightly backward touching center of palatal arch. In any case, the air stream is diverted to both sides of the tongue and laterally emitted. Occasionally unilateral emission is seen. The speaker contracts the muscles on one side, diverting the stream of air to the other side and producing the 'slushy' [s].

It is imperative that the child learn the 'new' sound by a self-monitoring process; then it is the clinician's responsibility to habituate the sound. If the child has not been able to produce an acceptable [s] sound, it may be worthwhile to force the tongue into a compensating position so that an acceptable [s] may be produced. Then the child can audit the correct sound that he produces. Orthodontists have found that

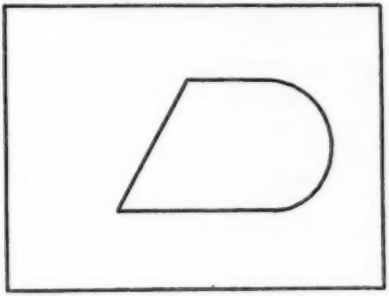

FIGURE 1. Oral device for lateral emission.

some appliances disturb speech patterns, but it appears that compensatory activities tend to overcome the disturbances. The compensatory efforts of these patients have a great deal to do with proper audition of their speech. Overcoming the disturbance involves audition and then compensation. It would follow that an oral device could be therapeutically utilized which would act as a governor and force compensatory movements. This procedure would, in effect, reverse the audition-compensation order.

In an attempt to force compensatory movements, an oral device, to be used only during instruction, was developed for lateral emission cases. The simple appliance is cut from the end of a tongue depressor. Varying sizes of tongue depressors can be used to accommodate mouth size. The diagonal cut allows for variation of alveolar ridges and the extent of palatal arches. Figure 1 illustrates the angle of the cut. When in use, the device is placed on the child's tongue in a vertical position along the midline of the tongue with the pointed end down and forward touching the back of the lower teeth. The child closes his mouth and the palate holds the device in place (Figure 2). The child is then asked to imitate the clinician as he produces an [s] sound in isolation. With the device in place a medial groove is automatically present and the air stream is emitted in the correct manner. Self-audition can then take place. When the device is used with very young children, it is advisable to make a small hole near the point and attach a thread which the clinician can hold in order to eliminate the possibility of accidental swallowing and gagging.

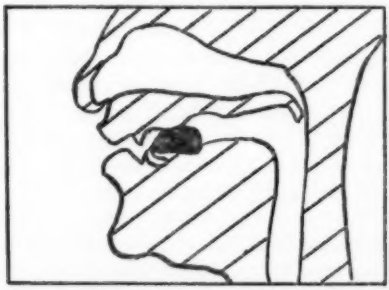

FIGURE 2. Oral device for lateral emission in place.

The device has been used with 10 school children from grades one to six. In nine cases, after no more than five minutes, an acceptable [s] was elicited. Much of the five minutes was occupied with maintaining the device in position. Six of the nine cases mentioned were successful three times in succession in three consecutive periods and were then able to 'pretend' they had the device in place and produce an acceptable [s] without it. The acceptable [s] was produced in isolation and in the initial position of nonsense syllables and words in subsequent sessions. Three children with troublesome frontal lisps also employed the device with immediate success during their first exposure.

This cursory study indicates some success with the oral device, but a much broader study is needed with a larger population to evaluate seriously the effects of such a device. It may be of further advantage to fashion a dental clip to fasten the device and thus eliminate wasted time in getting the device to remain stationary.

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• Use of Short Loops of Recording Tape

That tape recorders can be used to give a near echo effect by utilization of a short loop of recording tape has long been known. The writers have used Ampex, Magnecord, and Tandberg recorders clinically in this fashion, and the procedure can be used with some other machines. Short tape threading for the recorders mentioned is shown in Figures 1 and 2. Loops of tape are easily spliced with cellophane tape.

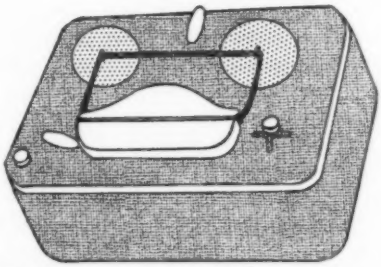

FIGURE 1. Short tape threading on a Tandberg recorder. The reels are removed, and the short tape is kept moderately slack. Playing time for a given length of tape can be varied by changing recorder speed. An Ampex recorder may be similarly threaded except that it is necessary to place an empty tape spool on the left spindle to maintain the tape at the correct height in the recording channel. With either machine, use of an empty reel on the takeup (right) spindle places unnecessary pressure on the tape loop but does help advance the tape.

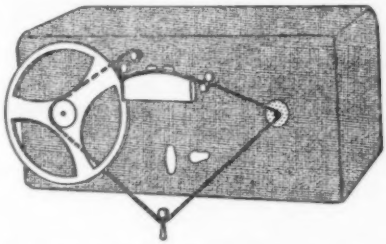

FIGURE 2. Short tape threading on a Magnecord recorder. One reel is used in the position indicated. A weight is needed to provide the necessary tension; however, pulleys for this purpose are available from the Magnecord manufacturers. An object of the lightest weight sufficient for maintaining friction between tape and drive wheels should be used as this reduces wear on the recording head. The threading of the tape may vary with different models of this make recorder.

Use of short tape loops is especially helpful in sound discrimination and production work. Discrimination lessons are enhanced when a teacher's production and a child's immediate imitation of a sound or word are recorded. The child is then asked to listen and to compare his production with that of the instructor. In addition to making it possible for the child to monitor his sound production in close approximation to that of the teacher and immediately after original production, use of this device is sufficiently interesting to

many children to secure their participation. Nevertheless, with some children this discrimination procedure will be most effective if used with other methods of reinforcement such as the games technique. Material to be examined by means of immediate replay should be kept brief and should not be replayed too many times or the child's attention may be lost.

With some recorders, discrimination work utilizing a tape loop may be enhanced by use of sound amplification as the child monitors the tape through earphones. In production work, he might speak in unison with the tape or a fraction of a second after each recorded response while monitoring through the earphones.

Short tape recording may also give the teacher a means of evaluating his ability to discriminate among students' correct and incorrect responses. Such discriminations must be reliable if the instructor is going to be consistent in rewarding only correct responses or successive approximations of the correct response. This tool has also been used effectively in helping to familiarize persons who stutter with their speech behavior. The short tape procedure has not been found helpful as a sound stimulation technique as the child's attention can be held more effectively by live sounds aimed directly into his ear. The applications described seem to be most effective in individual, or at least small group, instruction.

Machine noise may be a negative factor in employment of short tapes. Recorders used frequently in clinics, even though carefully maintained, tend to lose their best reproduction quality rather quickly. Short tape recording may not give a good result with high frequency sounds even though the recorder is operated at its fastest speed and a quality microphone is employed. Perhaps when the threading arrangement shown in Figure 1 is used, the tape is not moved at an adequate speed. The tape loop including the splice is relatively durable. Nevertheless, new tapes must be prepared occasionally when the tapes break or become noisy.

The conclusion is reached that short tape recording is a useful clinical tool especially when used in conjunction with established principles of learning and when mechanical difficulties are kept to a minimum. Many applications in addition to those described are possible.

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• Better Tape Recordings of Cleft Palate Speech

A tape recorder to be of maximum use in the speech clinic should be one by which characteristics and qualities of voice and speech can be variably controlled in all degrees of fidelity, tone, and intensity as needed. The instrument must provide as true a reproduction as science can provide. Not only must it be adequate in passing the so-called 'articulation tests' used to evaluate the communicative effectiveness of acoustical instruments, but it must also reproduce true likeness of the speaker's vocal tone and quality.

Persons who lack self-confidence in voice training need every possible kind of evidence that their speech is improving; a tape recorder must therefore be able to demonstrate the most subtle

differences. It is the author's experience that only the more delicate or sensitive machines are adequate in this respect, particularly in [s] sound variations. For example, a female client who had a defeatist attitude never could believe that she was making progress in improving her [s]. To convince her that she was, at one stage of her training a full track Magnecord with a speed of 15 ips and a sensitive microphone definitely were required.

Individual needs differ, corrective procedures and recording requirements vary as the remedial process progresses from one stage to the next; hence tape recorders must be designed to be flexibly controlled in fidelity, tone, and intensity.

The author has found that even the most expensive monaural (single channel) tape recorders with expensive microphone and speakers have failed to provide adequate reproduction of such cleft palate speech characteristics as mild unvoiced nasal snorts and mildly excessive nasal resonance. With monaural or single channel recorders the over-all voice intensity drowns out the nasal snorts and offers the speaker no acoustical concept of what his listeners really hear.

Only the 'stereophonic' or dual-channel type of tape recorder with special microphones and speaker arrangements solve the problem and provide life-like reproductions of certain cleft palate speech characteristics. Using a 'stereophonic' type tape recorder the clinician can record both the over-all voice and the mild nasal snorts or mild hypernasality separately. He then can play back the recording in such a way that the fidelity seems very true. (Quotation marks are placed around the adjective 'stereophonic' to indicate that it is used simply to pinpoint the particular kind of recorder; the word has no reference to the stereophonic principle.)

Essentially the 'stereophonic' recorder is a dual-channel recording and playback appliance. In a sense it is a unit with two recorders and two players. Whether or not the stereophonic principle is employed the 'stereophonic' recorder has two microphone channels, two preamplifiers, two playback amplifiers, and two speaker output circuits; it records on and plays from two tracks of a single reel of recording tape.

Since the 'stereophonic' recorder is basically a two recorder unit with two microphone channels, it provides a means of using two kinds of microphones or other microphone-like pickups such as a transducer or probtube and simultaneously recording two related sound sources. Since it has two speaker output circuits, it provides a means for dual recordings to be played back simultaneously in a single speaker cabinet or baffle with separately controlled tone and intensity.

With a special microphone arrangement plugged into one channel-jack designed to pick up unvoiced nasal snorts and a conventional microphone plugged into the other, the speech clinician simultaneously can make separately controlled recordings of the student's nasal snorts and over-all speech pattern.

A special microphone or rhinophonic breath pickup made by the author for recording unvoiced nasal snorts is now in use in the Associated Teaching Center, Baltimore, Maryland. Because of its shape it has been dubbed the 'cake-can mike.' Construction was sim-

ple. (a) A rubber funnel was glued to the front of a Shurr model R7 crystal microphone cartridge and one end of a rubber hose or tubing several feet long and with an inner diameter of ½ inch was slipped over the neck of the funnel. (b) The microphone cartridge and funnel were wrapped in sound-absorbing packing materials and stuffed into a cake-can shaped metal case. The tubing and microphone wire were extended through separate and properly sized holes predrilled along the circular side of the case, and the case lid was tightly fitted on the case and secured with self-threading screws. The size of the case is also that of a familiar cake can.

Nasal air emission can be picked up very easily by holding the open end of the rubber tubing just under the nose. Rubber rather than plastic tubing was used because of its sound-absorbing qualities. It is not desirable that the tubing induct ambient voice and sound. With the hose held just under the nose, nasal air impulses displace the air in the tubing until they reach the R7 cartridge buried deeply in sound-absorbing packing material. The impulses are relayed through one of the two microphone channels of the 'stereophonic' recorder to one track of the recording tape. The student's over-all speech is then recorded separately, yet simultaneously, on a second track of the same recording tape.

When the hypernasality is acute, conventional monaural recording is accurate enough for most purposes. It is when the student improves and the manifestations become less severe that conventional monaural tape recording becomes ineffective.

Hypernasality can be recorded very easily with a transducer (contact microphone) such as the Maico-Shurr remote heartbeat pickup. The transducer is allowed to rest along one contour of the outer part of the nose. It then is used with a 'stereophonic' recorder in the same manner as the 'cake-can' microphone.

Ordinarily 'stereophonic' recorders are furnished with two separate speakers which are to be placed several feet apart when stereophonic recordings are being played; however this technique is not concerned with the stereophonic principle. *It is designed simply to obtain a dual-channel recording of the student's speech with a conventional speech recording on one track of the recording tape and a special recording of a concomitant effect on the second track of the same recording tape.*

In playing back the dual recording in balanced proportion to give a true effect of live speech coming from its original human source, it is necessary to mount the two speakers in one cabinet or baffle; particularly must this be done in playing back dual recordings of cleft palate speech with concomitant nasal snorts or hypernasal effects. Just as the mouth and nasal areas are closely overlapped in their structures, the two speakers playing back their reproductions must be closely approximated and their sounds must be allowed to reverberate within a single cabinet structure.

Very gratifying tape recordings of cleft palate speech are being obtained with the equipment listed below. Specific instructions for using this equipment will be sent to interested readers who write to the Associated Teaching Center, 3411 Old York Road, Baltimore 18, Maryland.

1. Norelco Continental Tape Recorder Model 400.
2. Cake-can mike or rhinophonic breath pickup (as described).
3. Maico Shurr transducer, which in the Maico references is called a remote heartbeat pickup and is indicated as belonging to the Stethetron.
4. Electro Voice microphone Model 950 (conventional).
5. Two five-inch speakers, 3-4 ohm impedance, mounted side by side in a single baffle.
6. Microphone control box used to compensate for a weakness of the Norelco 400 which has a single recording intensity control, whereas the therapeutic technique requires separate controls for each channel.

Acknowledgments. The author appreciates the advice and technical assistance provided by Mark Mooney, Jr., Editor, and John L. Allen, Circulation Manager, *Tape Recording Magazine*; George R. Riley, Electro Voice, Inc.; and Bertram C. Thorne, Audiologist, University Hospital, Baltimore.

JAMES M. LAING

Associated Teaching Center
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COMING IN THE AUGUST JOURNAL

1. 'Tongue-Thrust Swallow, Speech Articulation, and Age' by Samuel G. Fletcher, Robert L. Casteel, and Doris P. Bradley.
2. 'Indications for Direct, Nondirect, and Indirect Methods in Speech Correction' by Elise Hahn.
3. 'Hypnosis in Speech Pathology and Audiology' by Clyde L. Rousey.
4. 'Age of First Word: Review of Research' by Frederic L. Darley and Harris Winitz.
5. 'Carbon Dioxide Therapy as a Medical Treatment for Stuttering' by Louise Robison Kent.
6. 'Mowrer's Theory Applied to Speech Habilitation of the Mentally Retarded' by Seymour Rigrodsky and M. D. Steer.
7. 'Speech Patterns of Muscular Dystrophic Individuals' by James M. Mullendore and Ralph J. Stoudt.
8. 'Relationship between Subjects' Self-Judgments of Speech Adequacy and Judgments by Trained Observers' by Bruce M. Siegenthaler and Marshall G. Flamm.

Other articles, Clinical Forum, and Book Reviews.

BOOK REVIEWS

Ernest H. Henrikson, Editor

NOTE: *Authors whose books are reviewed in the* Journal of Speech and Hearing Disorders *are provided opportunity to comment, if they so desire, on the reviews of their books. Reviews and comments are published together. The Publications Board and the Book Review Editor intend this policy to facilitate informed and balanced book reviewing in the interests of the profession served by the* Journal. (*See* Journal of Speech and Hearing Disorders, *24, 1959, page 425, for the statement inaugurating this policy.*)

BECK, SAMUEL J., *The Rorschach Experiment.* New York: Grune and Stratton, 1960. Pp. 247. $6.50.

Dr. Beck has likened the hypothetico-deductive use of the Rorschach Test to the type of experimental reasoning identified by Claude Bernard. Bernard is quoted: 'A physician observing a disease in different circumstances, reasoning about the influences of these circumstances and deducing consequences which are controlled by other observations—this physician reasons experimentally, even though he makes no experiments.' This concept of experimental reasoning is most ably demonstrated by the author's verbal manipulations of the old and new dynamic concepts regarding Research Test interpretation. The reader is simultaneously presented with an abstraction about reasoning and the opportunity to see that abstraction more concretely in action in the reasonings of the author himself throughout the book.

Dr. Beck's part-to-whole deduction process emphasizes the functioning of the personality as a whole, whereby various aspects of Rorschach Test data have been interpreted as indicators of dynamic functional interactions among resource traits. Primary considerations are given to assessing the emotional energies, emotional potential, and intellectual resources available to the subject. These Rorschach data and Rorschach logic are integrated with clinical logic in developing conclusions about the treatability of the subjects. In doing this the author relates all these data to Freudian theory.

The concept of 'Experience Actual' is discussed as it relates to and extends the traditional Erlebnistypus or popularly termed 'Experience Balance.' Beck uses the term 'Experience Actual' (EA) as an indicator of the patient's total emotional reactivity or mobility.

Rorschach protocols of seven subjects are presented with minute and detailed discussions and interpretations which enable the reader to follow very closely the thinking of the author. A demarcation is established between that which is based on Rorschach data and that which is an integration with other clinical information.

These discussions develop into dynamic pattern analyses among such Rorschach behavior categories as experience balance, experience actual, form, movement, color, shading, sequence, approach, and themes. These patterns are analyzed in terms of the intellectual and emotional resource traits of the subjects within psychoanalytic theory with special regard for the adaptive and pathogenic dynamics of the defenses. Emerging from these are treatment plans which use Rorschach responses as guides, both structurally and thematically.

In case number six, a woman suicide, Dr. Beck demonstrates how a diagnostician might be considered analagous to a multiple correlation computer in bringing together clinical data (history and interview) and Rorschach data for an understanding of the suicidal dynamics.

Of interest to speech pathologists are three Rorschachs of a boy who stuttered during the examination. Although the stuttering was reported by the examiner, the author did not choose to discuss this behavior in his interpretations of the boy's difficulties.

Besides demonstrating the personality dynamics of each case, the protocols were

Ernest H. Henrikson is Professor of Speech and Director of the Speech and Hearing Clinic at the University of Minnesota.

utilized for showing how a diagnosis is gradually developed from the test data, how a clinical report of findings is derived, and what factors enter into prognosis and treatment.

In discussing the test as an experiment, Dr. Beck has characterized his procedures as *behavioral* in nature. Paradoxically, it seems that Dr. Beck's own brilliance and genius as a Rorschacher subtract from the behavioral nature of the Rorschach Test situation. If by behavioral the author is referring to the detailed description and recording of the verbal and motor responses of his subjects, then he would seem quite accurate. However, once these behavioral descriptions have been made, Dr. Beck leaves the dimensions of behavior and employs brilliant and abstract inferences about the subject's behavior. This inferential behavior seems to be a necessary adjunct to the clinical use of the Rorschach Test; yet the lack of a description of this inferential behavior in fundamental terms leaves the total behavioral analysis incomplete. The reader cannot help but be impressed with Dr. Beck's domination over the data and with the many theoretical dimensions he brings to their interpretation. What Dr. Beck has accomplished here is making public his reasoning process in interpreting the Rorschach Test. But what has not been made public are the theoretical dimensions which he brings to this reasoning. Perhaps this was not his intent for this particular writing. The author has reaffirmed his high status as a clinician and has supported his long-standing contention that the Rorschach Test is an exclusive instrument to be used and experimented with by experienced clinicians. However, if the behavior of the examiner is as important as it has seemed both to Dr. Beck and to this reviewer from his analysis of the book, then the examiner's behavior in the administration and interpretation of the Rorschach will have to be described in behavioral terms as well as the subject's is before the total experiment can be fully understood. If the examiner's behavior cannot be so described and made completely public, then it would seem that the term *behavioral*, at least at our present state of knowledge, might be better omitted from a description of the Rorschach Test situation.

GEORGE SHAMES

Central Institute for the Deaf

Author's Comment: Thank you much for your letter of February 2 and more especially for permitting me to see Professor George Shames' review of *The Rorschach Experiment*. I can only express my unreserved satisfaction with a review which can be both as fair as this one and also puts the finger on the essential critical issues left open. Professor Shames penetrates to what I attempt to do in this book and insightfully evaluates what I have done.

Of his two critical questions, one bears on how behavioral I really am. For, having made my behavioral descriptions, I employ 'abstract inferences about the subject's behavior.' This is quite correct. As a less serious point at issue, I would take exception to the word 'abstract.' My inferences are the relations that I see between the data and their psychological significances. Such relations are, in my understanding, not abstractions but very solid realities. The more important issue here is, however, another. It rests in the principle stated by Bernard as to when the scientist steps from his task of observing to that of interpreting his observations. Professor Shames is apparently sympathetic to my having recourse to Bernard. What I am doing in my inferences is, then, that reasoning which follows observation. This is the method of all science. It starts with description. This follows on objective observation. To discipline himself to be thus impersonally objective is the student's first, and hardest, assignment. One will never be a better psychologist than he is accurate as observer. How good a psychologist he is—i.e., how accurately he reasons from his data—does depend on his understanding of human behavior, of which all clinical pictures form a special class. Understanding grows with experience. By this I do not mean to fall back on callow subjective judgments. Experience that is extensive and varied enough is essentially quantitative, even though it is not rubricked in tables. Also I know of no substitute for it.

The second point that Professor Shames raises is entirely well-taken: the examiner's behavior in the test administration. There is no doubt that the examiner is one of three variables in a Rorschach or any psychological test. The other two, of course, are the patient and the test. In the broad range of use to which the test is now being put, the examiner variable is uncontrolled. That is why so many reports of Rorschach test research cannot be taken as reliable. The results simply were not obtained under the same conditions. Schafer has done some valuable writing about this. It is one of the open problems in the Rorschach field—and

every living scientific endeavor has such problems. It is in fact a sign of its vigor and viability that it opens up questions. The younger tillers of this acre will be answering them and open up new ones in their turn.

Such are the comments which the review and your invitation are drawing out. Actually the review can stand as it is. But if you decide to publish any of the above, please feel free to do so.

SAMUEL J. BECK

University of Chicago

BENDA, CLEMENS, E., *The Child with Mongolism.* New York: Grune and Stratton, 1960. Pp. 252. $9.50.

The book is based on almost 25 years of research conducted by Dr. Benda in the research departments of the Wrentham and Walter E. Fernald State Schools in Massachusetts. Pertinent data from studies by other investigators have also been included in the text. It should be noted that parts of the book have appeared in the author's previous work, *Mongolism and Cretinism;* the first edition appeared in 1946, the second in 1949.

The author indicates that, depending upon the interest of the individual, different sections of the book may have different values. For example, the pediatrician and practitioner may find data which are important for diagnosis and understanding of the child's needs; the obstetrician may be assisted in recognizing the condition at birth and in counseling parents about further pregnancies; and the psychologist and teacher may learn to understand better the child's behavior patterns and his educational requirements.

Points made in the preface of the book include the following: (a) knowledge about mongolism has accumulated slowly over the past 100 years, (b) incidence of mongolism exceeds other morbid entities of severe mental retardation with three to four per 1000 births being reported from some hospitals, and (c) increases in such births have been observed in every country of the world.

The body of the book contains 11 chapters which are entitled: History, Frequency, Terminology; The Diagnosis of Mongolism at Birth; Physical Development; Anatomic and X-Ray Observations; Mental Development; Anomalies of the Nervous System; Alterations in the Different Organ Systems; Hematology and Biochemistry; Etiology; Prevention and Empirical Risk; and Principles of Treatment. An extensive bibliography and a recommended reading list for parents, social workers, educators, and psychology students are also included. Eighty-five illustrations and 38 tables may be found throughout the chapters. The majority of these require knowledge of normal and abnormal anatomy as well as of tissue pathology for complete comprehension; however, it should be indicated that many of the nontechnical graphs and tables were helpful in clarifying portions of the book. In general, the book will not be read with ease unless the reader is familiar with a good deal of medical terminology.

As may be apparent from what has just been said as well as from the chapter headings, the book is almost completely aimed at the physician and medical scientist. Comparatively speaking, little in the way of detailed information is directed at teachers, therapists, and laymen. Therefore, the reviewer's comments will tend to be more descriptive than evaluative.

Some of the author's beliefs which should be of general interest are as follows:

a. Terminology. The existing term mongolism is inaccurate and misleading since it is based on a misevaluation of the similarities between the eye characteristics of the child with the condition and the eye characteristics of individuals of the Mongolian race. Since many specialists have agreed that the growth deficiency associated with the condition appears opposite to that of acromegaly, a more appropriate name for the condition might be congenital acromicria.

b. Pathology. In addition to the more commonly recognized external physical stigmata such as brachycephaly, epicanthal folds, small flat nose, fissured tongue, short curving fifth finger, etc., there are anomalies in brain and spinal cord tissue, in thymus, thyroid, pituitary, and adrenal glands, in the liver, intestinal organs, and kidneys as well as in hematological and biochemical measures. The point being made is that the pathological condition known as mongolism actually extends down to the cellular level.

c. Etiology. Of the four major possibilities, i.e., heredity, spontaneous mutation, fertilization of an abnormal ovum, and environmental factors in early fetal stages, evidence tends to exclude the first two. Recent investigations in chromosomal histology reveal that children with mongolism have 47 chromosomes instead of the normal 46. This extra chromosomal particle is thought to interfere with cell metabolism on a molecular level. The problem may be traced to either meiosis, where a failure of both

members of a pair of homologous chromosomes to segregate may give the maternal gamete 24 instead of the normal 23 chromosomes, or to mitosis, where abnormal cell cleavage of the zygote after two normal germ cells have fused may also give rise to anomalies in chromosomal distribution. The cause of the abnormal chromatin distribution is associated with adverse factors present in the maternal organism at the beginning of pregnancy. Some of these conditions include: age beyond 35, menopause, continuation of menstruation and threatened abortions, thyroid and kidney disorders, previous abortions, long intervals between pregnancies, and bleedings during pregnancy.

d. Treatment. Despite the controversy which exists over treating the child with mongolism, treatment is justifiable and should be begun as soon after birth as possible. A program of pituitary-thyroid-vitamin B_{12} feeding, plus attention to the child's emotional and special educational needs, administered over the first eight to 10 years may often be seen to have positive effects on the child's physical and mental development.

The specific discussion of speech, which is the chief interest of readers of the *Journal of Speech and Hearing Disorders*, is only about two pages long. This should speak for itself relative to the section's comparative value. Delay and limitation of language maturation, stuttering, and articulatory-phonatory anomalies were mentioned. Exercises in strengthening and in coordination of articulatory muscles were said to be useful in improving the motor aspects of speech. Work in expanding language is advised only when appropriate intellectual levels are reached. Phonatory involvements were described as responding to improvement in nutrition and to thyroid treatment. Despite the brevity of the section, the reader, by virtue of the book's discussion of structural, glandular and C.N.S. involvements, achieves a better understanding of the organic backgrounds for the auditory, articulatory, and linguistic deficits that these children usually reflect.

In addition, it might be mentioned that because of the statement by the author that his treated mongoloids reach mental ages that lie halfway between the levels reached by untreated patients and normal children, more speech clinicians may be motivated to work with mongoloids provided they are receiving etiological therapy as outlined by the author.

In conclusion, the book contains a great amount of valuable data for all those who may be involved with evaluating and caring for the child with mongolism. It can be recommended as 'the' reference book on most aspects of this interesting subject.

EDWARD D. MYSAK

Newington (Connecticut) Hospital for Crippled Children

Author's Comment: I appreciate the opportunity given me to add some personal remarks to Dr. Mysak's review. The reviewer is perfectly correct in stating that the problem of mongolism has not yet been deeply explored from the viewpoint of speech and hearing disorders. Speech defects are a part of the clinical picture of mongolism. Speech development is always greatly delayed, and some mongoloid children do not speak in sentences until they are five or six years of age. Speech as a means of communication is greatly handicapped although the mongoloid child learns to understand short commands often rather early in life. While I am convinced that the pathology of brain development and maturation as a sequence to an error in metabolism is the cause of the delayed and incomplete speech development, much research must be done to establish whether speech development can be accelerated through learning methods. As to the hearing of the mongoloid child, we may guess that the development of the inner ear and, of course, the development of the auditory centers is abnormal in some cases; but very little is known about the clinical and pathological aspects of hearing in mongolism.

As to the etiology, some explanatory remarks are necessary. Research in chromosomes in the human species is so new and developments are so fast that the interpretation of data prepared several months to a year before publication has to be modified at the time of appearance. At present it can be considered for sure that the chromosomal assortment in the peripheral systems of the mongoloid organism is abnormal. Either a small supernumerary chromosome is present, of the size #21 (the difference between #21 and #22 is often not clear), or if the normal assortment of 46 chromosomes is found it is likely that some of the larger chromosomes are abnormal and a so-called 'translocation' has taken place. However, the meaning of this event is not too clear and most of the very definite statements which have appeared in print since publication of my book have to be taken with a grain of salt. Only after many different data, collected

by geneticists, cytologists, epidemiologists, and others, have been coordinated, will the etiology of mongolism be really understood. For this reason, the accumulated data in my chapter on the etiology of mongolism are valid, and the tenor of the discussion would be even more reserved as to the meaning of the new observations on chromosomes if the book were to be published today.

CLEMENS E. BENDA

Walter E. Fernald State School
Waverley, Mass.

BERKOWITZ, PEARL H., and ROTHMAN, ESTHER P., *The Disturbed Child*. New York: New York University Press, 1960. Pp. 204. $4.

This book is a study of the recognition and treatment of the emotionally unstable child. The authors begin with emphasizing the unique position of teachers for noting evidence of emotional disturbance in children, the need for teachers to understand behavior which is considered symptomatic of maladjustment, and their responsibility to recommend further psychological study when indicated.

Chapters on the schizophrenic child, symptoms of organic malfunctioning, neuroses, sexual deviation, and the psychopathic personality include, in each case, definitions, explanatory material, and behavioral descriptions of specific children. Suggestions are made for the teacher of the disturbed child and an outline of what the authors consider to be basic understandings which the successful teacher must accept is presented.

The last four chapters primarily concern the work of the trained psycho-educational therapist through projective techniques, the creative arts, and the academic curriculum. Transcriptions of actual proceedings in a classroom located in a psychiatric hospital illustrate procedures described previously. Each chapter of the book concludes with a brief summary, but the lack of a list of references seems unfortunate.

In the absence of a preface, some question is left in the reviewer's mind about the intended readers of this book. It begins as if it is intended for classroom teachers but makes rather extensive use of technical jargon and relies heavily on seriously disturbed and hospitalized children as illustrative material. The latter part concerns primarily the role of the special school and the trained psycho-educational therapist although there are aspects of general educational application, e.g., the use of the creative arts for therapeutic experience. It is the reviewer's opinion that the extent to which the book is geared toward extremes of emotional disturbance not generally found in the regular classroom and its general psychoanalytic orientation place serious limitations on its use by classroom teachers.

The book is readable and interesting. Such a concise coverage of symptomatology of emotional disturbance in children is not easily found and will undoubtedly be of value to many persons who deal with children. The increasing awareness of need for early detection and understanding maladjustment in children makes a book such as this welcome. It can be a valuable reference book for the psychologically oriented speech and hearing clinician.

LOUISE WARD

University of Alabama

Authors' Comment: The authors would like to express their appreciation to the reviewer, Mrs. Louise M. Ward, for her very favorable and understanding approach to our efforts. The following comments are offered here merely to clarify certain questions raised in the review.

The absence of any definition of 'intended readers' was a deliberate omission because it was felt that the material in the book is applicable to a number of professional groups whose main interest is the disturbed child. Since the primary focus of the book is behavior rather than etiology, the intended reader is anyone for whom this emphasis is valuable. The stress on overt behavior may also account, to some extent, for the lack of a 'list of references' in each chapter. While footnotes are used whenever necessary, the bulk of the book is based on personal experiences which are neither drawn from, nor dependent upon, reference materials.

The reviewer questions the extent to which the classroom teacher is capable of using the material presented in this book. The authors view the teacher as a qualified professional who, of necessity, has become keenly aware of the relationship between learning and personality, particularly in understanding personality deviations. Moreover, there are many teachers who prefer to work with the maladjusted child whether in public schools, in private schools, or in psychiatric institutions. These teachers are described by the reviewer as 'trained psycho-educational thera-

pists,' but we must not lose sight of the fact that they are teachers. They are teachers with special interests and skills, perhaps, but teachers, nevertheless. It might be valuable to point out that the teachers referred to in *The Disturbed Child* are regular New York City, Board of Education teachers who decided to work in a psychiatric hospital school, and the children with whom they work are sent for observation and diagnosis from the regular New York City public schools. In every one of these cases, therefore, the ordinary classroom teacher had to cope with the disturbed behavior long before it came to the attention of the specialists.

The regular classroom is one of the first places in which deviant behavior is expressed, somewhat subdued, perhaps, by the formal classroom structure but apparent, nevertheless, to all who are aware. It is hoped, therefore, that in its own way *The Disturbed Child* will help make teachers as well as other professionals concerned with children somewhat more aware, and that the use of this book will help facilitate both the detection and the prevention of maladjustment in children.

PEARL H. BERKOWITZ
ESTHER P. ROTHMAN

New York City

GRASHAM, JOHN A., and GOODER, GLENN G., *Improving Your Speech*. New York: Harcourt, Brace, 1960. Pp. 326. $3.75.

Improving Your Speech is described by its authors as a text in voice and diction. The book consists predominantly of materials to be used for the evaluation and improvement of speech behavior. There is also some discussion of the anatomy and physiology of the vocal system, the International Phonetic Alphabet, and other topics of a more or less 'academic' nature. The organization of the text and the extensive inclusion of drill material, however, identify the book as primarily a manual or workbook for the student.

Though Grasham and Gooder do not explicitly indicate the audience for whom their book was prepared, there are two circumstances in which the book might be most useful. For one, the book might be used in a college or high school in which there is no clinical facility for students with speech and voice difficulties. In such a program some of these students might benefit from being placed in a special speech class in which attention was given to general problems of voice and articulation. A second application of the book might be in a program in which all students were screened and placed in speech classes of graduated proficiency. Those students with speech not quite adequate for a regular speech class and yet not serious enough to require clinical attention could conveniently be grouped into small classes in which they could receive the kinds of drills and exercises prescribed by Grasham and Gooder.

The book is organized into four main sections, Evaluating Your Speech, Enriching Your Voice, Increasing Your Clarity, and Expanding Your Expression. In the first section are presented materials to facilitate the evaluation of the student's speech competency. Included are materials to aid in evaluating the student's voice, breathing, articulation, time, pronunciation, etc. In addition, there are check-lists and a general 'speech proficiency profile' on which to record the results of these evaluations. This section also includes a brief discussion of the anatomy and physiology of the vocal process and accompanying diagrams to clarify the presentation.

The second section treats breathing, initiation of vocal tone, resonance, and increasing vocal power. The section is further divided into considerations of specific vocal disturbances such as nasality, insufficient loudness, harsh or hoarse voice quality. As in other portions of the book, the authors provide a great deal of material for evaluation and practice.

The third chapter, 'Increasing Your Clarity,' deals with articulation and pronunciation. The authors include a description of the International Phonetic Alphabet and provide drill materials and diagrams to help teach the phonetic value of the various symbols. The drill materials are ample and the diagrams are clearly presented and easily interpretable. The phonetic symbols are also paired with diacritic symbols for the instructor who prefers to use the latter system for representing the speech sounds.

The last section of the book contains material relative to variety in pitch, loudness, and time as well as a discussion of 'creative expression.' Here again there are numerous selections for practice and drill.

Though *Improving Your Speech* does not appear to be particularly novel in its concerns or its presentation, it does represent another source of materials for the instructor involved in teaching speech skills on the advanced secondary or college level. Theoretical or conceptual material is clearly sub-

ordinated to work on practice and drills. The theoretical discussions included are, however, lucid and accurate.

GERALD M. SIEGEL

University of Kansas

Authors' Comment: We appreciate the opportunity which you have given us to comment on the review of our book, *Improving Your Speech*. We believe that Dr. Siegel has given a thoughtful and factual appraisal of the text and concur with his suggestion relative to the use of the book in special classes devoted to the general problems of voice and articulation.

We have no additional suggestions to be included in the review and prefer that it stand alone in the *Journal of Speech and Hearing Disorders* without comment on our part.

Thank you for reviewing our book and for the courtesy of sending us an advance copy.

JOHN A. GRASHAM
GLENN G. GOODER

Los Angeles Harbor College

KLOPFER, WALTER G., *The Psychological Report*. New York: Grune and Stratton, 1960. Pp. 142. $4.50.

From this little volume the speech pathologist may learn how at least one member of an allied discipline has formalized his thinking about the problems of communicating clinical findings to colleagues in his own field and particularly to those in other fields.

To the author, Director of Clinical Train-in Psychology at the University of Oregon, the psychological report is a serious matter in which he has been interested for some time. He prepared one brief chapter on this topic for a volume on the Rorschach by Bruno Klopfer and, according to Leopold Bellak, M.D., in a foreword for the volume under review, recently participated in a symposium on Psychological Test Reporting sponsored jointly by the American Psychiatric Association and the Society for Projective Techniques.

Although written primarily for clinical psychologists, this work should be of interest to clinical workers in speech pathology and other areas in so far as they, too, write reports for others and even may serve as consumers of the psychologist's product.

The first eight chapters account for 72 pages and treat such matters as purpose, focus, style, language, and organization of a report. Chapter 9, Case of Mike, the longest chapter in the book by far (41 pages) 'is intended to illustrate the process of integrating the results of a test battery.' Concluding the volume is an appendix of illustrative reports written by the author. Introducing each such report is a brief statement indicating for whom the report was prepared and the special circumstances which influenced specific aspects of its preparation. This material provides a unique opportunity for the reader to evaluate for himself the degree to which the author meets his own criteria for preparation of the psychological report.

For Klopfer, an adequate psychological communication considers the needs of the referent and especially the client. 'If the purpose of helping the client cannot be served by the psychological report, its basic utility is doubtful.' A good report focuses on specific aspects of the problem stressed by the referent and proposes a solution for the problem. The preferred style is exemplified in what the author calls the scientific report and stresses accuracy, objectivity, and lack of ambiguity. The report is relatively free of test and other psychological jargon. Even technical terms, although they are recognized as appropriate for some readers, should be kept to a minimum. According to the author, 'If the clinical psychologist himself really comprehends what he is attempting to communicate, a technical language is really unnecessary.'

The discussion of stylistic language and other related characteristics does not imply any high degree of formalization of the reporting activity of the clinician. Nowhere does the author suggest a rigid outline although he includes a summary discussion of various ways of organizing a report suggested by others. It may be noted that his own report samples do follow certain very general headings. The chapters on organization which Klopfer considers to be one of the most crucial issues in writing a report even suggest a contrary emphasis. In these pages particularly, it becomes clear that this book stresses more than writing skill per se. To write a good report one must first be a good clinical psychologist who functions in the role of clinician, not psychometrist. As such, the psychologist must have an adequate understanding of personality and psychopathology and be able to document his interpretations at least for himself, or if he is a student in training, for his supervisor. It is interesting to note that the author generally does not agree that the finished psychological report need include such documentation.

Although many of the author's statements, e.g., his opinion about documentation or his comments about the necessity for a technical language, evidence biases derived from personal clinical experience, he attempts to be objective, in the sense that he refers to opinions which differ from his own. He also brings together the relatively sparse, but at times interesting, relevant literature that does exist.

Based as they are in many instances on personal experience, the biases of the author may not be acceptable to all readers. To this reviewer, however, whether or not one agrees with all of the details of the author's discussion is not critical. The contribution of this volume lies in its attempt to sensitize the clinical worker to the kinds of linguistic, stylistic, and other stereotypes to which he may be prone, and to the need for exposing the student in training to the importance of the communication aspect of the clinical enterprise and making him aware of the factors which may affect this process.

It occurred to this reviewer that it may be worthwhile for clinicians regularly to examine samplings of their recent report efforts in order to determine the extent to which they have succeeded in communicating pertinent, unambiguous information about persons who are discriminable on at least some dimensions.

GEORGE J. WISCHNER

University of Pittsburgh

Author's Comment: Thank you for your letter of February 3 enclosing the review of my book by Dr. Wischner. I very much appreciate the opportunity for writing a commentary on his review. However, after reading it over carefully, I have concluded that he has done such an excellent and comprehensive job in reviewing the book and been so responsive to my own purposes and ideas, that anything I might say in addition would be redundant. Consequently, to my own great surprise, I am turning down the opportunity for writing a commentary of my own.

WALTER G. KLOPFER

University of Portland

LEVINE, EDNA SIMON, *The Psychology of Deafness*. New York: Columbia University Press, 1960. Pp. 308. $7.50.

'The mature personality is one that possesses not only a strong inner urge for psychological wholeness but also sufficient free psychic energy and intellectual awareness to master whatever painful facts must be faced in the service of reality.' And, 'In rehabilitation, helping a client develop his resources to their maximum possible extent has the effect of minimizing his liabilities.' And another, 'The parents, on the other hand, in their anxiety to apply full-scale rehabilitation measures, are apt to overlook the critical necessity of reestablishing themselves as symbols of security in the child's new and frightening world.' These sentences are direct quotations from a new and very excellently written book, *The Psychology of Deafness* by Edna Simon Levine.

The author discusses the psychological linguistic, educational, and social implications of hearing loss on the child and on the adult. She points out that the seriousness of these implications varies from one person to another, depending on the psychic well-being and maturity of the individual. Further, their effect is influenced markedly by the degree of hearing impairment, the period of life in which the loss occurs, and the manner of onset of the loss, i.e., whether progressive or sudden.

Every effort is made by the author in the first chapters of the book to give the reader a deeper and more profound understanding of the hearing handicapped individual. Her analysis of the problem of deafness is good and the material is exceptionally well presented.

Part III of the book, 'Psychological Examination and Evaluation of Persons with Impaired Hearing,' should be of real interest to clinical psychologists. The last chapter is concerned with suggestions for research in the area of the acoustically handicapped.

I would recommend the book to anyone who is interested in, or works with, the deaf and the hard of hearing.

JOHN W. KEYS

University of Oklahoma Medical Center

Author's Comment: I have read the advance copy of Dr. Keys' review of *The Psychology of Deafness: Techniques of Appraisal for Rehabilitation* and am most pleased with the heartening comments. At times, in the course of writing, I had despaired of ever finding the right words to describe the intricate psychological involvements of impaired hearing. I am particularly gratified to know the 'message' has come through because it justifies the faith in my efforts of the Office of Vocational Rehabilitation, Department of

Health, Education, and Welfare through whom the book was made possible. It is our earnest hope that the book will help stimulate broader interest and deeper clinical and research efforts in behalf of persons with impaired hearing on the part of all disciplines concerned with the problem.

EDNA S. LEVINE

New York

MORKOVIN, BORIS V., *Through the Barriers of Deafness and Isolation.* New York: Macmillan, 1960. Pp. 178. $4.50.

This book is essentially a description of the 'life-situation' or holistic approach to the habilitation of the hearing-impaired child, with special emphasis on those techniques used in developing language. Concepts are presented whenever possible in a functional situation which provides both the motivation for learning and the nonverbal cues to the meaning of the language involved. Particular stress is placed on the multisensory approach. The child simultaneously hears (amplified hearing), sees, and often feels the speech movements of the instructor. He then imitates the pattern he has received. The term oral communication as used in the book refers to both speech comprehension and speech production. Considerable use is made of silent reading, visual aids, and meaningful activities to supplement the incomplete auditory and visual patterns.

Twenty-eight authorities, in addition to Dr. Morkovin, have contributed sections to the book; two psychologists, a medical doctor, an audiologist, a director of a hearing center, two parents, and 19 teachers of children with hearing problems. The techniques employed are described through the inclusion of detailed outlines of lesson plans. A script of one of the recent Morkovin-Moore speech reading films is presented along with instructions for follow-up when using films as 'talking books.' There are also sections on the importance and process of integrating children who have hearing handicaps and children who have normal hearing, the use of hearing aids and development of sound awareness, medical aspects of hearing impairment and the role of the family. Of special interest is the introduction by O. Hobart Mowrer. Dr. Mowrer suggests that the methodology described in the book could be further improved by a strict adherence to the theory of imitative learning. In particular he suggests that the first words taught to the child should function instrumentally, not representationally, i.e., *candy* or *grapes*, not *ball* or *fish*. The word and object should not be presented simultaneously. The name-word formed on the adult lips should be a prelude or cue for the presentation of the object. For example, the child sees the word *grape* on the lips while the grapes are concealed. After he has seen the word, the grape is produced and given to him. A time interval must then ensue before the repetition of the process.

This book should be of considerable interest to parents of hearing-handicapped children and should give them good insight into the procedures used in training their children. It is also written in sufficient detail to be useful to the teacher as a sourcebook for stimulating lesson plans and activities. Dr. Morkovin and his collaborators are to be congratulated on a job well done.

JANET JEFFERS

Los Angeles State College

Author's Comment: The main objectives of this book are: (a) to stress the need to begin functional oral communication for the hearing-impaired child in the preschool years to prevent isolation, experiential deprivation, and emotional maladjustment and to facilitate a more normal development, better interpersonal relationships, orientation to environment, and an interest in constructive activities; (b) to promote a team approach for parents, teachers, otologists, audiologists, and psychologists for the utilization of the child's maximal potentialities and the clearing of all possible channels for effective learning and skills needed to function in a hearing society.

In the light of these objectives the author and his collaborators have aimed to provide clinicians, prospective teachers, and audiologists with a guide and sourcebook introducing theoretical and practical systematic 'life situation' approaches to the use of audiovisual aids for teaching hearing-impaired children speechreading, speech, and language at successive levels. Specialists are encouraged to observe the development of the child's potentialities and to experiment with groups of children by exposing them to different materials and techniques.

The author and collaborators will welcome questions, suggestions, and the exchange of materials and experiences with readers. Address 881 S. Bronson Ave., Los Angeles 5, California.

BORIS MORKOVIN

Los Angeles, California

PERRY, NATALIE, *Teaching the Mentally Retarded Child*. New York: Columbia University Press, 1960. Pp. 264. $6.

During the past few years, parent groups in many communities have persuaded school boards to organize special classes for children with intelligence quotients below 50, the 'trainable' mentally retarded child. These groups have also been instrumental in many states in enacting laws which establish special classes or instructional centers for these children. They argue that all children are entitled to an educational program which will foster optimum development. While experience showed that children below the prescribed level of a 50 IQ rarely succeeded to any extent in beginning academic work and that many of the children presented deviant behavior patterns and physiological deficiencies which made it difficult to fit them into group situations, parents, nonetheless, felt that these children should receive training and educational service rather than custodial care.

There has been almost no precedent anywhere to guide this work with trainable mental retardates with the exception of an occasional professional journal article. Usually these children are found in understaffed institutions or in homes in communities where there is not sufficient technical information or resources to bring out the child's potentialities. Aware of the dearth of existing information regarding what and how the trainable child can learn effectively, Miss Natalie Perry brings a sympathetic, but realistic approach to *Teaching the Mentally Retarded Child*. She is aware of the many questions parents, communities, and teachers may have concerning the abilities and deficits of the trainable mental retardate and tries to show how all can work together in ameliorating some of the heartbreak inherent in these situations. Drawing from a background of 20 years of experience in the teaching of retarded children, Miss Perry outlines school programs which seem to her to fit the needs in the education of the trainable child. The many activities are graded into beginning, intermediate, and advanced levels with long-range planning that stresses immediately attainable objectives rather than fostering false hopes that have little foundation.

A sampling of the activities which represent kinds of experiences that seem within the ability of the severely retarded child consists of projects in physical development, self-care, and self-expression. Other activities considered are crafts, work, and group projects. Of interest to speech clinicians are a chapter on projects in music, presented as a means to develop better auditory perception, train memory and comprehension of the sounds of language, and a chapter on language, stressing its importance in adjustment. The author notes that the retarded child typically needs enlargement of a vocabulary with concrete meanings and a simple language structure. When the child has a language disability greater than is warranted by the mental retardation, Miss Perry suggests that he should be examined at a speech clinic. Because of their difficulties in all developmental prerequisites to speech, the teacher has to discard usual speech correction methods and use ingenuity in devising ways to guide these children in developing the speech they need and can acquire.

A chapter entitled 'School—Community Relationships' offers a variety of valuable public relations suggestions for obtaining cooperation and understanding for programs for the 'trainable' child. One notes that if the community has been helped to understand the general need for good educational and good mental health facilities for its normal children, it will be more receptive to the idea that retarded children have similar but also special unmet needs.

While the worthwhile principles and programs are offered primarily for the teacher of the retarded, other clinical workers may gain insight into the limited mental world of these children, supplementing their knowledge in an area not usually contained in the college curriculum. Frequently the speech pathologist as a consultant or program director must have answers for parents who plead, 'If he could only learn to talk. . . .'

The general answers may be obtained from a reading of this book. There are omissions, however, which restrict its value beyond usage by the teacher beginning work in the area of retardation. The scholar will find the author remiss in the utilization of research findings. Rather, the book is written on a basis of intuitive and practical experiences. While the individualized approach is preached, there is nothing in the book indicating some of the specific etiology which would make these children even more individual than the normal child. Certainly the neuropsychiatric retarded child, the 'garden variety' retardate, the mongoloid, et al., would respond differently and offer excellent subjects for case study. While some descriptive material is utilized as brief illustration, it is felt that more detailed case history is a necessity since, as stated in the text, there

is no typical retarded child. The appendix contains among some good evaluation charts, sample schedules, report forms, and party suggestions, a personal data form which indicates the author's awareness of the need for detailed information. Since the team approach is a 'must' in thorough diagnostic examinations of the mentally retarded, some indication is needed of how and what other disciplines contributed and what they may add to the teacher's knowledge of each child. As a teacher in this field, Miss Perry must also be aware of what she and other teachers can contribute to the ever-continuing diagnosis. The teacher in this area has special training. Viewing aberrant behavior daily, modifying it, gaining small triumphs, she may have, as the author demonstrates throughout her book, a full handbag of information which most teachers are too modest or too awed to present. The teacher's role as a full-fledged 'team member' might be more forcefully presented.

Many children at the mental level depicted in this book are eventually institutionalized particularly since modern miracle drugs have lengthened their lives beyond that of their parents. For this reason there might have been more emphasis on institution programs for the 'trainable.' Many of the institutions in the country have been attempting to carry out the kinds of programs which Miss Perry is describing.

Realizing that her ideas are not static, due to the nature of the population with which she works, Miss Perry suggests that readers do not follow the given graded programs too literally. They should experiment and use their imaginations. Her methods and principles may supplement those of the interested teacher or may stimulate and act as guide lines for the new teacher who is about to undertake work in a field which requires not only patience, as the perceptive Miss Perry implies, but a good background in the many problems of these children with multiple handicaps.

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Author's Comment: The very thorough review by Dr. Bernard B. Schlanger of my recent book, *Teaching the Mentally Retarded Child*, discusses certain points which have stimulated me to give them further consideration. I am glad to have this opportunity to elaborate on them here, since some of them were made more by implication in my book.

First of all, I consider the main purpose of the book to be a suggestive guide for teachers and students in special education and in allied fields, such as psychology and social work. I am happy to know that the reviewer feels it will be of benefit to speech specialists and consultants, as I had hoped. I agree that parents might benefit from reading it, especially if given some guidance.

I had decided the book should give teachers a practical, interesting guide where they could find suggestions as easily and quickly as possible, and was quite aware that such treatment would not be of benefit to research workers because of the lack of mentioning and describing specific references to each major point as I developed it. While I reviewed all the literature available and pertinent to my subject, I listed my sources either as 'related reading' (for those references relating to each chapter) or in the final bibliography rather than discussing my sources at relevant points in the text.

I agree with Dr. Schlanger that there is a deplorable dearth of research material regarding how the trainable child can best learn. As more studies are now being undertaken and research findings will begin to accumulate, I hope a book will be written which can draw together the conclusions from the findings and thus give more authoritative direction to schools planning for this long-neglected youngster. Such a book would be a most valuable addition to the experiential approach used by some of us in establishing methods and principles in the absence of more carefully controlled research findings.

I also concur with Dr. Schlanger that an experienced teacher can contribute much to the team of experts studying a given child. While the educator is frequently included in the diagnostic conferences at clinics, it is hoped that this practice can be enlarged and her role of providing important clues from her observations extended. In a good number of cases the teacher's observation of the child and of his school program may give a picture of him that differs markedly from that of a parent or even that of a specialist, who may have seen the child for one or two hours in a very different setting. Diagnosis is, of course, important for the prognosis of the child. It should be known by his parents and others, in order to make plans and to arrange his placement in the training program best suited to his needs now and later.

When Dr. Schlanger mentioned the lack of emphasis on institution programs in my

book, he may not have realized that I included them when I discussed 'community' implications. For example, when I point out that a child may become a more useful member of his community through training, I mean the institutional community, if that is where he is or will be. Although I do not specifically refer to institutions frequently, I do not mean to exclude the school classes for trainables connected with institutions for the mentally retarded. Certainly, institutionalized trainable children should have as good schooling opportunities as those living at home. A teacher of institution classes may be grateful for suggestions such as those found in a book like mine, because she may have limited access to other professional people in the field and to pertinent college courses. I feel that whether the reader of my book is a teacher in a private day school, a public day school, or a private or state residential set-up, she would need to be selective in using the material for her particular situation, changing it to suit her needs. For example, the teacher in an institution or in certain other places where she has a large class might have to exclude or modify certain activities I have suggested, because these might only be applicable to a class with a more easily managed smaller group of children.

Dr. Schlanger has a good suggestion when he mentions providing some case studies, so that the reader who is not too familiar with trainable children could gain an idea of some of the problems she might encounter. Case studies would have been a useful addition to my book if they could have avoided the implication that the problems unique in one case study are typical, or the suggestion that there are stereotyped behavior patterns in various nosological types of mental deficiency, depending upon their etiology. Because of these dangers, I decided against the inclusion of case studies. I felt it was important for the teacher to study each child as an individual with his special needs and to note his individual abilities and disabilities in each area (perceptual, physical, language, etc.). In this fashion she can understand him better and develop an appropriate program for his future development. My intention here also ties in with Dr. Schlanger's comment that my omission of specific etiologically connected behavior might have made it more difficult to see the child as an individual.

It is, of course, important for teachers to have a background in the etiology of mental deficiency. Etiology of the trainable is not markedly different from that of other mentally deficient children. Specific types, such as mongolism and brain injuries, occur at all levels of mental retardation. I felt that the subject of etiology was too extensive for me to include. Hence I did not discuss etiology specifically in my book on the trainable, but I listed certain texts among my references which I felt cover the subject and would be especially useful for the teacher.

I specifically avoided describing the behavior of the mongoloids, the 'brain-injured' child, etc., because the various research reports do not *clearly* indicate typical behavior for certain types, at least on the level of the child of 50 IQ and below. I feel therefore that the teacher, rather than classifying her child as to his type of mental deficiency, should concentrate on the individual.

All of my points here must again come back to the gaps in knowledge to which both Dr. Schlanger and I have alluded in different contexts. The exposure of the teacher to the present existing controversies and inadequately covered findings is debatable. It might give her better insight through knowledge, but it might also confuse her and might detract from the motivation and child-centeredness which she hopefully brings with her to the job. When a more definitive body of knowledge is accumulated about these children, it would certainly be a disservice to withhold it from the practitioners.

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The last three lines of the text in the first column, page 45, of the February 1961 issue of the *Journal*, should read, '. . . language learning to the young deaf child (5). The present paper reports an early pilot study designed to evaluate the effects . . .'